HISTORY TAKING FOR THE MRCPCH

Multiple food reactions

Child with egg , peanut and seasem allergy , on recent anaphylactic reaction

Clinical features and association of multiple food allergies :

- *GIT : vomiting , diarrhea , colic and constipation.*
- *Respiratory : wheeze , rhinitis , asthma*
- *Dermatological : atopic dermatitis , eczema , urticaria.*
- *Behavioural : irritability , crying and milk refusal*

<u>What to ask ?</u>

HPI :

- *Anylasis of food taken :*
- *Type of food : Which food taken ?*
- *Amount of food : how much amount ?*
- *Was he well before reaction*
- *Spead of reaction*
- *Prescribe the reaction :*
  - ✓ *Fascial swelling , urticaria*
  - ✓ *GIT : vomiting , abdominal pain , loose motion , difficulty swallowing ,*
  - ✓ *R.S : difficulty of breathing , stridor , wheeze*
  - ✓ *CVS : hypotension , collapse.*
- *Response to anaphylaxisis : given epipen , transport to hospital*

- *General : Wt loss./fever / activity ?*

- *Nutritional history in detail:*

  - *Was he in breast feed or formula? For how long*
  - *Time of weaning? Is it complete or partial weaning?*
  - recent dietary changes e.g : introduction of formula milk ? cereal , bread ?
  - *Time of start to give him mix food? And what type of food u start with?*
  - *Did u give by mouth or through NGT.*
  - *did u give especial type of food ?*
  - *how many times /day?*
  - *Any dietien involve ?*
  - *He had any allergy to any type of food?*

past history : k/c of multiple allergies

- *When , where , by whom , how present ?*
- *investigations done : skin prick test?*
- *treatment given , admitted or not ? where to ward or ICU ?*
- *medical hx. Of other allergic hx.-*
  - ✓ *eczma : any skin changes on neonatal period ?*
  - ✓ *rhinitis : any seasonal symptoms?*

- ✓ *asthma :*

- *drug hx. – have epipen with you ? any allergy to any drug*
- *other hospital admission ? or surgical operation ?*
- *birth hx.–*

allergic hx. :

- *to food , to drug*

vaccination hx.:

developmental hx.:

family hx :

- *Similar condition*
- *atopy – ceolic – CF – IBD.*

Social hx.:

- *Personal :*
- *Economic :*
- *Environment : smoking , housing , animals*

Discussion

What is the difference b/w allergy and intolerance ?

- *Allergy : is immune – mediate reaction to food antigen (protein). Classically this by IgE mediated type 1 hypersensitivty. Signs include anaphylaxis , urticaria and atopic dermitis.*
- *Intolerance : is non-IgE mediated and characterize by delay or non acute onset. Can be other than protein e.g : lactose intolerance.*
- *Mixed reaction involving both IgE and non – IgE responses*

Classification reactions :

- *Mild :*
- *Moderate :*
- *Severe :*

Diagnosis of multiple food allergies :

- *Clinical manifestation and history.*
- *Skin – prick testing and IgE radioallergosorbent testing (RAST) can help.*
- *Stool analysis : alpha1-antitrypsin (AT), eosinophil cationic protein (ECP), immunoglobulin (Ig) A, and cow's milk-specific IgA antibodies ".*
- *Histological confirmation if suspected colitis or enteropathy.*
- *To r/o other causes :*
    - *Stool inspection :send for microbial C/S , virology and reducing substances.*

- *Blood for : CBC , S/E , albumin , LFT , celiac screen (tissue TG + igA) , inflammatory markers*

What is management in multiple food allergies? Team involved : pediatrician , dietician , allergic doctor of immune :

- ✓ *Avoid allergen : food , drug*
- ✓ *Amino acid-base formula in case of multiple food allergy e.g soya , egg , wheat and peanut.*
- ✓ *Adrenaline auto injector*

Chronic diarrhea in infant

Ch. Diarrhea (>3/day for >2wk)

∆.∆. of chronic diarrhea in infant :

1. *Infection (Giardia lamblia) – H_X of similar D. / H_X of Acute G.E.*
2. *secondary lactose intolerance (post infective e rota virus)*
3. *Food allergy or intolerance (specific food: Cow's milk protein" stool showing : alpha1-antitrypsin (AT), eosinophil cationic protein (ECP), immunoglobulin (Ig) A, and cow's milk-specific IgA antibodies ".*
4. *Functional (Toddler's) diarrhea commonest →(see bits of vegetable food)*
5. *Coeliac D- rare.*
6. *Cystic Fibrosis.*
7. *Immunodeficiency(Campylobacter or Salmonella).*

Clinical features of cow milk protein intolerance :

- *GIT : vomiting , diarrhea , colic and constipation.*
- *Respiratory : wheeze , rhinitis , asthma*
- *Dermatological : atopic dermatitis , eczema , urticaria.*
- *Behavioural : irritability , crying and milk refusal*

What to ask ?

HPI :

- *GIT :*
  - *Analysis of bowel habbits :*
    - *When started ? Duration (> 2WK) and frequency >3per day.*
    - *Amount ? consistency ? colour ? Is it contain Blood/ Mucous.?*
    - *Odor ? is it difficult to flush ?*
    - *Any precede acute gastroenteritis ?*
  - *Ass vomiting ?*
  - *abd. Pain ?*
  - *what about appetite ?*
  - *increase in tummy size ?*
- *General : Wt loss./fever / activity ?*
- *Nutritional history in detail:*
  - *Was he in breast feed or formula? For how long*
  - *Time of weaning? Is it complete or partial weaning?*
  - *recent dietary changes e.g : introduction of formula milk ? cereal , bread ?*
  - *Time of start to give him mix food? And what type of food u start with?*
  - *Did u give by mouth or through NGT.*
  - *did u give especial type of food ?*

- *how many times /day*
- *He had any allergy to any type of food?*

- *analysis of weight loss*

- *When came to ur concern that osama his weight not increase?*
- *How u know he is not gaining weight?*
- *Is this drop in weight gradually or rapid drop? Over how much time?*
- *Any intervention done for that? Does he change feeding pattern after that ? any response for that?*
- *Does u have chart for his growth previously?*
- *Any f/up for his weight?*
- *Any dietien involve ?*

- *MSS : skin changes ? joint pain ?*
- *RS : cough ? musical sound ? difficulty of breathing*
- *CNS : any abnormal movement ?*
- *CVS : any concern*
- *URINARY SYSTEM :any concern*

past history :

- *medical / surgical –*
- *travel hx*
- *hospital admission ? or surgical operation ?*
- *birth h. –*
- *drug hx. –*

allergic hx. :

- *to food , to drug ,*
- *any skin change in face ?*
- *any seasonal symptoms ?*

vaccination hx.:

developmental hx.:

family hx :

- *Similar condition*
- *atopy – ceolic – CF – IBD.*

Social hx.:

- *Personal :*
- *Economic :*
- *Environment : smoking , housing , animals*

<u>Discussion</u>

<u>Red flag features in chronic diarrhea :</u>

- *FTT*
- *Bloody stool.*
- *Severe frequent diarrhea.*
- *Systemic upset.*

What is cow milk protein intolerance ?

- *is clinical syndrome resulting from sensitization to one or more proteins in cows' milk.*

What is the difference b/w allergy and intolerance ?

- *Allergy : is IgE immune – mediate reaction(type 1 hypersensitivty) to food antigen (protein). Signs include anaphylaxis , urticaria and atopic dermitis.*
- *Intolerance : is non-IgE mediated and characterize by delay onset. Can be other than protein e.g : lactose intolerance.*
- *Mixed reaction involving both IgE and non – IgE responses*

Diagnosis of protein milk intolerance :

- *Clinical manifestation and history.*
- *Blood for : to r/o other cause*
  - ✓ *CBC , S/E , albumin , LFT ,*
  - ✓ *celiac screen (tissue TG + igA) , inflammatory markers*
- *Stool analysis :*
  - ✓ *alpha1-antitrypsin (AT), eosinophil cationic protein (ECP), immunoglobulin (Ig) A, and cow's milk-specific IgA antibodies ".*
  - ✓ *send for microbial C/S , virology and reducing substances*
- *Skin – prick testing and IgE radio allegro sorbent testing (RAST) can help to r/o allergy .*
- *Histological confirmation if suspected colitis or enteropathy.*

  - *Sweat test / fecal elastase …… For cystic fibrosis.*
  - *Duodenal biobsy.*

What is management of cow milk intolerance?

- *Milk exclusion with milk substitute for 2-4 weeks e.g*
  - ✓ *Hydrolysed protein formula*
  - ✓ *Soya base milk for those more than 6 months b/c of phytoestrogen in soya milk.*
  - ✓ *Amino acid-base formula in case of multiple food allergy e.g soya , egg , wheat and peanut.*
  - ✓ *In breast fed mothers , should excludes cow milk from diet.*
  - ✓ *Dietitian : monitoring using serial weight measurement.*
  - ✓ *Prognosis is good resolve by 3rd birth day.*

Cerebral Palsy

Case 1 : samy is 6 month old boy presented to me with global developmental delay , with decrease feeding , frequent vomiting and poor weight gain. His birth weight was 4.2 kg and current weight 4.7 kg only . O/E , he has delay mile stones , and he has spastic brisk reflexes and arching back . I feel this pt. needs more work up and further management.

Task : take detail hx. And discuss management.

What are complications and problems of CP ?

- *MSS :*
    - *Joints Contractures & Scoliosis due to Spasticity of muscles*
    - *Osteopenia lead to fracture.*
- *GIT :*
    - *Swallowing problems*
    - *Excessive salivation "saliorihuria ".TTT by hyoscine patch.*
    - *G.E.R.D.(Pseudo B.Palsy.).*
    - *constipation*
- *CNS :*
    - *Convulsion*
    - *Hearing problem*
    - *Vision problem*
- *RS : wheezy chest.(due to recurrent aspiration lead to recurrent infection)*
- *GROWTH AND DEVELOPMENT :*
    - *Poor Wt gain.*
    - *Learning Difficulties*
    - *Developmental delay.*
    - *Speech problem : articulation*

Differential Diagnosis of CP – SPASTICITY

- *Familial Spastic paraparesis*
- *Intrauterine drug withdrawal.*
- *Transient dystonia of prematurity*
- *Tethered cord*
- *Congenital tightness of heel cords.*
- *Toe walkers (Autism, Use of walkers)*
- *Rule out neuro-degenerative diseases(Primary and Metabolic)*

Differential Diagnosis of CP- ATHETOSIS / ATAXIA:

- *Metabolic disorders e.g Glutaric aciduria*
- *Dopamine responsive disorder.*

- *Rett Syndrome*
- *Chromosomal disorders e.g Angleman's*
- *Intracranial lesions .*

<u>WHAT TO ASK IN CP :</u> Concentrate on Problems +Neonatal H_X + Developmental H_X + Social H_X.

HPI : what is major concern ?

DEVELOPMENT HX (developmental delay):

- *When mother notice her baby abnormal ? what she notice ? and what action taken? Any assessment done ?*
- *Is it delay or regress milestone ?*
  - *Is he start to gain skills and then lost "regress – metabolic" or*
  - *Not develop from start " delay – CP"*
- *Gross motor :*
  - *Is he sitting ? standing ? walking ? (when start to sitting ? standing ? walking ?)*
  - *Is he turn side ?*
  - *Is he supporting his head ? when pt support his head?*
  - *Is he rolling on bed ? when pt start to rolling?*
- *Social :*
  - *Is he toilet training ? day by 3yrs….night by 5yrs*
  - *Is he dress and undress himself.? Undress by 3yrs ……dress by 5 yrs.*
  - *Is he smiling ? when start to smile ? look at the face ? stranger awareness ?*
- *Fine motor and vision :*
  - *any concern regard vision ? is he follow side to side ?*
  - *is he reaching out for object ?*
  - *Is he grasping with palmar grip and bring things to mouth?*
- *Speech and hearing :*
  - *any concern regard speech ?*
  - *how many words know?*
  - *any concern regard hearing ? screening test done or not?*
  - *is he turn to sound …..mother sound/ noise sound ?*
- *GROWTH: FTT:*
  - *What about his weight ?*
  - *When notice that he didn't gain weight ?*
  - *Can you estimate how much reduction?*
  - *You seek any medical advice? Who give advice "dietien"?*
  - *What action plan given? Is measure taken help him to gain weight ?*
  - *Did he had F/UP ? did he had growth chart for f/up?*
- *NUTRITIONAL :*
  - *What :*

    - *What type of milk ? Breast feed or bottle feed ?*
    - *what type of food? Any special formula ?*
    - *what route of feeding ? through NGT , or gastrostomy tube*
  - *when :*
    - *frequency "how many meal/day?" .*
    - *duration , dairy of meal*
    - *start solid food ?*
  - *who : who give ?*
  - *where : away from distraction ?*
  - *any allergy to certain food ?*

- *GIT : looking for GERD*
  - *What about appetite ? any concern regard swallowing ?*
  - *any vomiting / or reflux? If GERD : how many times/day ? amount ? content? Related to cough or eating ? stained with blood ? ass with abnormal movement ? anything relieve-antiacid / antireguritation ? anything increase ?*
  - *What about Bowel habbits ? constipation*
  - *Any increase in tummy size? Or tummy pain?*
- *RS : look for aspiration pneumonia*
  - *Cough : Dry or wet ? time during the day ? Frequent cough? Is cough immediately after feed? Vomiting then cough ? relieving factor or exagrated factors ?*
  - *Recurrent wheezy chest? Any musical sounds from chest?*
  - *Difficult of breathing?*
- *CNS :*
  - *Cortex :*
    - *awareness of surrounding? any abnormal movement? Or postures ?*
    - *Seizure type , frequency , treatment , SE , drug level , compliance , last one.*
  - *Cranial nerves :*
    - *Any concern regarding vision ? or hearing ?*
    - *Abnormal eye movement ? lacrimation ?*
    - *Difficulty of swallowing ? drolling of saliva? Regurgitation ?*
  - *Motor : is he move limbs freely? If not to which limit he move his limbs?*
  - *Sensation : do you notice that he can't feel touch or pain in any site of his body?*
- *MSS:*
  - *Any joint pain/swelling or deformity " contracture, hip dislocation" ? anything relief it ? anything increase ? no plan for surgery ? is it follow by physiotherapist and orthopedic surgeon?*
  - *Any abnormality on the back "scolosis" ?*
  - *Any skin pigmentation?*
  - *Any bed sores?*

<u>SYSTEMIC REVIEW :</u>

- *GENERAL: associated fever ? affect sleep patern?*

- *CVS: feeling of increase in heart beat? Change of his lip colour? Interrupted feeding ? frontal sweating ?*
- *URINARY SYSTEMS:any concern regarding urination?*
    - *any urinary incontinent?*
    - *Amount of urine , colour , odour and frequency ? UTI*

PAST HISTORY :(very important in CP)

- *Prenatal hx : during pregnancy :*
    - *are u on regular f/up e antenatal clinic ?*
    - *Did they did jelly scan for you ? they told her anything going abnormal ?*
    - *Did she received any drugs e.g: dexamethazone / or alcohol-smoke ? did she receive folic acid? Did he take vaccine ?*
    - *Did she expose to radiation ?*
    - *Are you develop any complication during pregnancy like HTN , DM , PROM?*
    - *Did she had skin rash , fever , or any infection during pregnancy (TORCH is cause of CP)?*
- *Perinatal hx :*
    - *gestational age : did he delivered in the time or before date?*
    - *weight ? what is the weight at birth ?*
    - *Mode of delivery …vaginally/CS ? if CS what indication of CS? If vaginally is it assisted or spontaneously?*
    - *Duration of labour ?*
    - *Complication of delivery : did he receive any support i.e rescustation or cry immediatly?*
    - *Where deliver ? at home or hospital ?*

- *Postnatal :*
    - *Did he need admission to nicu ? for how long?*
    - *Did he need any support ? I mean*
        - *did he need breathing support , is he receive surfactant ? connected to breathing machine ? for how long ?*
        - *did he need circulatory support "dopamine , doputamine"?*
        - *any cooling therapy?*
    - *What complications he had ? any RD ? Develop any abnormal movement ? Any episodes of hypoglycaemia ? infection ? jaundice ? bleeding ?*
    - *Done for him any jelly scan ? what did it show ?*
    - *Treatment on discharge ? details of ttt.*
    - *f/up if present? With whom ?*

To complete past history : K/C OF CP

- *When diagnose as having CP, where , by whom , how present?*
- *How diagnosed?*
- *Need hospital admission? Where ? and why ?*
- *What treatment given?*
- *f/up : with whom ? professional involved so far (dietein ,speech therapist , pediatrician , physiotherapist).*

- *Screening test done or not ?result of previous investigations?*
- *previous management of contractures?*
- *any surgical intervention so far?*

<u>DRUG HX : (baclofen , hyoscine patch , anti convulsant)</u>

- *what : recent/past management ? treatment at home ? dosage ? route ? ask about physiotherapy for spastic CP*
- *when : frequency of therapies ? doctor seen at home?*
- *Compliance with treatment : Who give ? develop any SE from drugs*
- *Allergy to any drugs?*

VACCINATION HX :

- *is he vaccinated up to date ?*
- *any extra-vaccine? Influenza , pneumococcal , RSV .*

FAMILY HX :

- *of similar condition ? of genetic disease ? of metabolic disease? Sudden infant death? hx. of gland in the neck ?*
- *is your husband is your relative?.....metabolic*
- *How many children you have? They are well ?*

SOCIAL HISTORY:

- *impact of the disease on pt:*
  - *severe learning difficulties ?*
  - *affect his growth and development?*
  - *Level of dependency (is he feed himself , clean himself??).*
  - *Transport*
  - *Schooling ?*
- *impact of the disease on family :*
  - *income satisfy ?*
  - *financial support*
  - *social supports(social worker , extended family ,respite care)*
  - *are u and ur husband working ? who take care of baby ?*
  - *aware of the disease ? care of device*
  - *effect on other sibling ?*
- *housing any modification for his disease? ,*
- *smoking may aggravate his chest problem?*
- *Animals at home?*

<u>What is your biggest worry ?</u>

- *is my baby can go normal school?*
  - ✓ *We have to assess his IQ and then put him in suitable school accordingly.*

- *If normal IQ : either*
  - ✓ *Regular school e supervision*
  - ✓ *Or still special school because of his disability.*

DISSCUSION

WHAT IS DEFINITION OF CP ?

- *A group of Persistent Disorders of Posture and Movement due to Non Progressive insult of Immature Brain " up to 4 yrs".*
- *The motor disorders are often accompanied by disturbance of sensation, cognition, communication, perception and/or behavior and/ or by a seizure disorder".*

What are Types of CP ? physiological types :

A. *SPASTIC:*

- *Commonest (60-70 %) .*
- *affect pyramids "pyramidal ", upper motor neuron .*
- *symmetric or asymmetry.*
- *4 types (anatomical types):*

1. *Diplegic:-*

- *Both side of the body affected (Lower Limbs affected more than upper limb)*
- *NO Bulbar Palsy .*
- *Children may be not walk.*
- *Common in preterm , LBW , abnormal labour or delivery.*
- *Ass with :*
  1/Perinatal problems (mainly) → asphyxia—P.V.L.Malacia.
  2/Prenatal (TORCH / Fetal Alcohol S.)
  3/Low Birth Wt. (Little's D.)

2. *Quadriplegic :-*

- *Both side of the body affected (Upper Limbs affected more than lower limb)*
- *ass with severe Contractures and Spasticity (Wind Swept Deformity + Hips dislocation + Scoliosis)*
- *Bulbar Palsy : they have problem in swallowing and feeding.*
- *severe mental retardation , fits are common.*
- *Common in full term ass mainly with HIE.*

3. *Hemiplegic:-*

- *Weakness more distally.*
- *Associate with Epilepsy + Sensory defect + Cranial N. defect*
- *NO Bulbar Palsy .*
- *Children will walk by 18 – 24 months.*
- *Ass with :*
  - *Periventricular Leukomalcia , haemorhgic disease of neoborn" in Term baby".*
  - *Intra Ventricular. Hge . " in PreTerm baby ".*
  - *Sickle cell anaemia*

- *strock*

4. *monoplegic : not common.*

B. *Dyskinetic : (10 – 20 %) :*

- *extrapyramidal – basal ganglia*
- *Total body involvement : Central hypotonia " neck , trunk " , spastic of limbs.*
- *Subdivided into 2 types : dystonic and athetoid types*
  - ✓ *Athetoid movement : Involuntary movements*
  - ✓ *Dystonic movement :*
- *Common in FT., ass with : kernictrus and , Neonatal Encephalopathy.*

C. *Ataxic : 10 -15%*

- *extrapyramidal – basal ganglia.*
- *total body involvement .*
- *cerebellar ataxia (ass with Diplegia) diagnosed late.*
- *You must R/O : cerebellar tumors , friedreich's ataxia , ataxia telangiectasia , metachromatic leukodystrophy.*

D. *mixed type : 10%*

- *choreo athetotic cp.*
- *Ataxia and diplegia = Have mix of features .*
- *ass with kernicterus*

<u>What Are Causes Of Cp As General?</u>

1/ PRENATAL : 85 – 90 %

- *genetic forms.*
- *cerebral malformation .*
- *maternal alcohol / substance use.*
- *congenital infections : TORCH*
- *IUGR.*
- *Prematurity particulary under 32 weeks.*
- *Vascular factors : CHD , DIC , coagulpathy .*

2/ intrapartum :

- *HIE : Neonatal encephalopathy : ask about seizures , and may be used neuroprotection (cooling)*
- *Periventricular leukmalacia*
- *Intra Ventricular haemorrhage (ask about head scan)*

3/POSTNATAL : 10 – 15 %

- *Infections : Meningitis/encephalitis/sepsis.*
- *Hyperbilirubenaemia , severe hypoglycaemia not treated.*

- *Vascular : Stroke.*
- *Asphyxia due to drowning ,or aspiration.*
- *Head trauma .*
- *hydrocephalus*

How can diagnosed CP ?

- *Thoroughly detail history to get the clue of CP .*
- *through examination : developmental delay diagnosed between 6-18 months.*
- *MRI changes.*

What is Management of CP ?

a. *Admission .*
b. *History :*
   - ✓ *Clinical history, high risk factors and family history important ,*
   - ✓ *History of neurological deterioration*

c. *Examination and evaluation :*
   - *full examination including v/s , anthropromtric measures*

d. *Investigations*
   - *No specific tests*
   - *Most important investigation is an MRI Intracranial lesions study (include MRI of spinal cord if indicated)*

- *Other Laboratory Investigations: (looking for general check , complications of CP , alternative diagnosis):*
  - *CBC , blood cs . CRP.*
  - *Chemistry panel :RFT , LFT , SE*
  - *Urine screen for amino acids, organic acids, carnitine.*
  - *Plasma ammonia, lactate, pyruvate, acyl-carnitine, very long chain fatty acids*
  - *CPK (In very hypotonic weak children)*
  - *Imaging :*
  - ✓ *C-XRAY. , ABD U/S*
  - ✓ *UPPER GIT ENDOSCOPY.*
  - ✓ *C.T / M.R.I. Head :*
    - *CT for emergency and better to detect pathology related to bone .*
    - *while MRI is better for soft tissue , brain atrophy , ventricular dilation.*
  - ✓ *MRI spine if there is lower motor neuron sign.*
- *OTHERS :*
  - ✓ *24 PH STUDY.*
  - ✓ *Chromosomal analysis.*
  - ✓ *E.E.G.*
  - ✓ *Metabolic screen including CSF.*
  - ✓ *Congenital Infection " TORCH" Screen .*
  - ✓ *Genetic studies including DNA studies when indicated.*

Indication of Investigation:- investigation not done routinely in CP.

- *No obvious cause found by H_X.*
- *developmental regression - Loss of Skills." Metabolic ".*
- *+Ve Family H_X of C.P.*
- *Neonatal Encephalopathy.*
- *Un usual features .(ataxia , nystagmus)*
- *L.M.N. findings.*
- *Symmetrical Signs.*

e. Take more input from different specialist by (Multidisciplinary Team are):

1. *Pediatrician/ neurologist : Coordinator and prescribe :*
    - *Antispacity "muscle relaxant " :*
        - ✓ *baclofen .*
        - ✓ *botulinum toxin inj. in the (to relief pain from contracture)*
            - *It's last effect 3-6 months.*
            - *S/E : pain at site of infection , dysphagia, weakness.*
    - *Anticonvulsant*
    - *Hyoscine patch / anticholenrgic drugs: for excessive salivation*
2. *Physiotherapist: should be involve early to Prevent Contractures.*
    - *Splints may be used at night to prevent contracture*
3. *Occupational-therapist:*
    - *Adapting the home environment to aid the child's functioning.*
    - *Adapting Playing at home to aid development.*
4. *Communication-therapist:*
    - *Help early in feeding .(due to swallowing difficulties).*
    - *Help later in Speech .*
    - *encourage Parents to stimulate their children.*
5. *Social Worker: play a major role*
    - *Family Support financially*
    - *arrange Holydays + Social admissions.*
    - *respite care house(big home to put child to give relief for parents).*
6. *Dietician :*
    - *prescribe high calorie of food .*
    - *f/up of weight by plotting in special charts.*
7. *others :*
    - *Orthopaedic surgeon : responsible for*
        - ✓ *Surgery as last resort.: in case of severe contracture.*
            - *Soft tissue release : muscle*
            - *tendon release : elongate elongation of Achilles tendon after 5yrs of age.*

- *after surgery put in cast and then orthosis to prevent weakness and atrophy of muscle.*

- *Neurosurgeon : responsible for*
  - ✓ *elective rihztomy.(to cut specific nerve to release spasticty).*
  - ✓ *Correction of scolosis .*
- *Psychologist : for hyperactivity disorders and parent counselling.*
- *Play-therapist*
- *Teacher : Special Educational Needs Agencies to ensure that pt attends suitable school*
- *E.N.T.*
- *eye sp.*

f. Treatment of complications of CP :

- *MSS :*
  - ✓ *Spasticity of muscles and Joints Contractures : treated by*
    - *physiotherapy*
    - *antispastic drugs : baclofen , botulnum , surgery*
    - *support : splint , orthosis.*
  - ✓ *Scoliosis*
  - ✓ *Osteopenia : ttt by vit d , syrp ca , bisphosphanate in case of frequent fractures.*
- *GIT :*
  - ✓ *Swallowing problems and feeding problem (due to weakness of muscles of phyranx) ttt by gastrostomy feed.*
  - ✓ *Excessive salivation "saliorihuria ".TTT by hyoscine patch/ oral anticholnergic drugs / ligation or reimplanted of salivery glands duct.*
  - ✓ *G.E.R.D.(Pseudo B.Palsy.).*
  - ✓ *Constipation due to lack of mobility and decrease of fiber intake.*
- *CNS :*
  - ✓ *Convulsion*
  - ✓ *Hearing problem*
  - ✓ *Vision problem: squint , refractory error ttt by optimetrist*
- *RS :*
  - ✓ *wheezy chest due to frequent aspiration*
- *GROWTH AND DEVELOPMENT :*
  - ✓ *Poor Wt gain.: high calories through gastrostomy tube.*
  - ✓ *Learning Difficulties*
  - ✓ *Developmental delay.*
  - ✓ *Speech problem due articulation defect ttt by speech therapist.*
  - ✓ *Sleeping problems.*

What is cause of severe feeding problem ?

- *pseudobulbar palsy in quadriplegic CP.*

- *GERD*

What is the difference b/w bulbar and pseudobulbar?

- *Pseudobulbar palsy: upper motor neuron lesion , spasticity, difficult in speech and swallowing .spastic tongue , gag reflex.*
- *Bulbar palsy : lower motor neuron lesion , wasting and fasculation of tongue , dysphagia , dysthartheria , dysphonia.*

Prognosis of CP :

Gross Motor Functional classifications of CP :

g. Level 1: Clumsy child; no assistive devices.
h. Level 2: walks independently but limited in outdoor activities.
i. Level 3: walks with assistive mobility devices.
j. Level 4: Self-mobility severely limited area even with assistive devices.
k. Level 5: No self mobility even with assistive devices.

Fever e rash

Case1: (exam eygpt 2016 – cat scratch)

DD of FEVER (SHORT DURATION) WITH RASH:

1. *Viral :*
   - ✓ *EBV (glandular fever , palatal patch + splenomegaly).*
   - ✓ *HSV ,*
   - ✓ *varicela - chicken box*
   - ✓ *roselea infantum (convulsion) ,*
   - ✓ *erythema infectioum ,*
   - ✓ *measles (miserable*
   - ✓ *rubella (mildly unwell*
   - ✓ *lyme disease*
   - ✓ *Cat scratch*
2. *Bacterial : (toxic and unwell child)*
   - ✓ *scarlet fever :*
   - ✓ *group A streptococcus*
   - ✓ *SSSS :*
   - ✓ *Menigococaemia:*
   - ✓ *Rocky mountain*
3. *Miscellenous :*
   - ✓ *JIA ,*
   - ✓ *KAWSAKI (FEVER 1 week + RASH + peeling of fingers + mouth changes + red tongue + non-purelent conjunctivitis + cervical LN).*
   - ✓ *rheumatic fever*
   - ✓ *malaria*

- *RUBELLA (german measles) :*
  - ✓ *self limiting childhood illness*
  - ✓ *incubation period 1week-2 week. Respiratory route spread.*
  - ✓ *Fever , maculopapular rash start from face then to whole body , fading 3-5 days , cervical ln , conjunctivitis and pharyngitis.*
  - ✓ *Complications : arthritis , encephalitis , thrombocytopenia and myocarditis*
  - ✓ *If pregnant mother infected give rubella syndrome (cong. Deafness , cardic defect and cataract and mental retardation).*
- *Measles :*
  - ✓ *Incubation 10-12 days- respiratory route spread.*
  - ✓ *Cough , conjectivitis , macular rash start behind the ear and then whole body. , rash fade 5-7 days and turn brown.*
  - ✓ *Complications : pnemnia , SSPE*
- *Kawsaki :*
  - ✓

Introduction :

a. *Good evening , I am dr. moh. Paediatric registrar working here , I believe I am taking to mother of musalam .*
b. *I received a referral letter from the regional hospital doctor about his condition , so can I please , ask you some questions about his condition?*

What to ask in fever e rash :

Main complain :

- *what is main problem ? cough , fever and breathing difficulty .*
- *when was last time Daniel was quite well?*

HPI and systemic review :

❖ *Analysis of fever :*

- *Duration : For How long she has develop this fever ? 3days.*
- *Grade : how you know temp is high? By touch by hand. how much ?*
- *Time : which time of day it's increase (at day time or at night)?*
- *Course :*
  - ✓ *What was the course of it (is it sudden or gradual onset)?*
  - ✓ *Continous or on/off ? spiking up and down ? in between decrease to normal*
- *Relieving factor : what thing u did brought temp down ? no drug relieve it?*
- *Aggravating factor : u notice anything make it more?*
- *Ass symptoms : Is it associated with any rigors? or night Sweating ? fits ?*

❖ *Analysis of rash (MSS)*

- *When appear :*
  - ✓ *before fever :*
  - ✓ *with fever :*
  - ✓ *after fever fever : 5th disease?*
- *Distrubation of rash :*
  - ✓ *all over the body*
  - ✓ *start behind ear and then distrubated…..measles*
  - ✓ *Start on the face …..rubella*
  - ✓ *around nose and mouth …….hsv*
  - ✓ *lower limb and buttock…….HSP.*
- *describe the rash :*
  - ✓ *is it raised , flat*
  - ✓ *size /colour*
  - ✓ *contain any pus or fluid*
  - ✓ *any discharge or bleed ?*
  - ✓ *Relieving/aggravating : sensitive to light ?*

- *ass symptoms with rash :*
  - ✓ *itching …..*
  - ✓ *eye changes : discharge or redness ….. rubella / measles/kaswaki.*
  - ✓ *mouth changes :*
    - *sore throat …..*
    - *lip fissuring..red tongue …..kawsaki.*
    - *red tongue …scarlet fever.*
    - *spot white inside "kopilks spot …measles"*
    - *brusis on the palate.*
  - ✓ *joint pain or swelling …… HSP / rheumatic fever / JIA.*
  - ✓ *Changes of hands and foot*
  - ✓ *Difficult of walking ?*
  - ✓ *Swelling in armpit or groin- cervical lymph?*
- *Hx. Of contact with anyone having similar condition?*
- *Hx. Of ingestion of any drug?*
- *Hx. Of travelling …….lyme and malaria*

<u>Systemic review :</u>

- *Haematology : any ass pallor .*
- *General : activity and sleeping*
- *RS/CVS:*
  - *Cough /runny nose/sore throat/sob/*
  - *SOB / musical sounds.*
  - *Bluish discoloration around the lips.*
  - *awareness of heart beart ?*
  - *swelling of lower limbs or lower back*
- *GIT :*
  - *What about apetite ?*
  - *Nausea/ Vomiting*
  - *what about bowel habbit ?*
  - *abdominal distension ? abdominal pain ?*
- *Nutritional hx .:*
  - *what about his diet ? amount ? content ? feeding difficulty ? frequency ?*
  - *Allergy to any type of food ?*
- *Growth : any concern regarding his growth ?*
  - *Weight loss ? growth chart ? is he following the same centile or falling down or crossing ?*
  - *What his height ?*
- *CNS :*
  - *abnormal movement ? headache ? concern regarding vision or hearing ?*
- *Urinary system :*
  - *urine amount ?*
  - *color ….red urine (HSP)?*

- *stream ? dysuria ? hx. Of recurrent UTI.*

PAST HX. :

- *Past hx. of similar condition?*
- *Previous hospitalization? Picu /ward? For what reason?*
- *What investigations done ? blood test and scan. What bugs ?*
- *Any treatment received ?*
- *Hx. Of recurrent other type of infection?*
- *Previous hx. blood transfusions ?*
- *Previous surgery .*

Drug hx.

- *Medication given ?*
- *Allergy to drugs ?*

Perinatal hx. : perinatal diagnosis

- *Any important events during pregnancy , illness during pregnancy?*
- *gestional age , birth weight ?*
- *Any nicu admission ?*
- *Any disease during neonatal period?*

Vaccination hx. : (v. important in fever with rash).

- *is he receive vaccine uptodate ?*
- *any extravaccine .? BCG , pnumococal vaccine , influenza vaccine*

Developmental hx. :

- *is he developing like his peer ?*

Family hx. :

- *Of similar condition ?*
- *Is your husband is your relative?*
- *How many children you have ?*

Social hx.:

- *Environment :*
  - ✓ *any animals at home …. Cat scratch.*
- *Impact on pt :*
  - ✓ *frequent hospitalization , schooling , poor compliance*
  - ✓ *is the school nurse and teacher aware of his condition?*

- *Impact on parents :*
  - ✓ *Marriage stability , financial supports*
  - ✓ *Who taking care of pt.? and other sibling?*
- *Impact on sibling : rivalry.*
- *Social support : social worker support , financial benefits.*

Any more concern ? anything you want to add ?

Discussion

<u>Investigations :</u>

- *CBC and reticulocytes count :*
  - ✓ *LYMPHCYTOSIS ……kawaski*
  - ✓ *Atypical lymphocytes …..glandular fever.*
- *Inflammatory markers :*
  - ✓ *ESR (JIA – kawski) ,*
  - ✓ *ASO (rheumatic fever)*
- *Monospot/paul bunnel test ……glandular fever.*
- *Serology : viral serology*
  - ✓ *Rubella serology*
- *blood c/s / swab …….menigococemia*
- *echo : kawsaki (cornory aneurysm), rheumatic fever.*

Treatment : according to the cause

- *supportive management for viral infection:*
  - ✓ *measles : vitamin A*
- *Antibiotic s*
- *IVIG , aspirin for kawaski. To reduce cornory artey aneurysm and thrombus formation.*

IDDM.

DD of poor control of IDDM - hyperglycaemia?

- *Poor compliance (short + /- thin): either*
    - *Insulin therapy : dosage problem , site of injection , storage of insulin*
    - *Diet control : high calories.*
    - *less exercise : sedentary life*
- *Hypothyrodism (short + obesity).*
- *Celiac disease (short + thin).*
- *Addison disease.*
- *Infection : recurrent UTI , otitis media.*
- *Dawn phenomenon*
    - *morning hyperglycemia coinciding with growth hormone secretion.*
    - *Treated by increase bedtime insulin.*
- *Somogyi phenomenon*
    - *morning hyperglycemia in well control children " HbA1C and RBS record were good "*
    - *due to night time hypoglycemia due to hormonal compensatory .*
    - *treated by reduce bedtime insulin.*
- *Diabetic dwarfism " mariuac syndrome".(short + obesity + hepatomegaly)*
- *Social problem like : parent conflict/divorce "stress" , poor understanding of disease "ignorance".*
- *Psychological effects of diabetes.*

What are complications of diabetes mellitus ?

a. ***Microvascular complications:***
    - ***Retinopathy***
    - ***Neuropathy***
    - ***Nephropathy.***
b. ***Macrovascular complications :***
    - ***Cornory atherosclerosis***
    - ***Peripheral vascular disease.***
c. ***Others :***
    - ***Limited joint mobility .***

What to ask in dm ?

HPI : polyuria , polydepsia ,reduce weight and increase apetite.

- ***Renal system (for both present complain and complication)***
    - ✓ ***Amount ? frequency ? colour ? flank pain : radiation, character , severity?***
- ***Growth :(for both present complain and coelic, hypothyroid)***
    - ✓ ***is it significant ? how much ? within which period ? what about her appetite***

SYSTEMIC REVIEW : looking for symptoms of hypothyroidism , celiac , and complications:

1. ***Symptoms of hypothyroidism :(less activity , constipation ,un tolerate cold more than others , start to gain weight recently , school performance deteriorate)***
2. ***Symptoms of coleic : (weight loss , fatigue , diarrhea).***
3. ***Symptoms of complications: CVS , CNS , EYE , MSS.***

- ***General :***
  - ✓ ***what about activity ? type of exrcise ? time of exrcise? Ass with hypoglycaemia? Precausation before going for excrsice ?***
  - ✓ ***ass fever ?***
  - ✓ ***tolerance of cold ?***
  - ✓ ***what about his sleeping ?***
- ***GIT :***
  - ✓ ***what about appetite ?***
  - ✓ ***what about bowel habbit ?***
    - ***loose motion –amount , colour , mucus /blood , difficult to flush….."coleic" .***
    - ***constipation ? what mean by constipation? Frequency .. 3-4 days consistency …Solid , any blood , any treatment given and it's response ? ……"hypothyrdism".***
  - ✓ ***Any increase in tummy size " hepatomegaly --- Mauriac"?***
  - ✓ ***Abd. Pain – site , duration ,character , radiation , aggravating / relieving?***
  - ✓ ***Vomiting?***
- ***CVS: awareness of heart beat-sudden/gradual ?***
- ***CNS: any loss of consciousness (syncope) "addison disease " ? headache ? numbness/ burning sensation of limb?***
- ***EYE: any concern regarding vision ?***
- ***RS: ass cough – duration , day/ night , dry /productive ? difficult of breathing-rest /excrise, day/ night ? musical sound ? chest pain***
- ***MSS: (looking for association and complication)***
  - ✓ ***any skin changes ? dry skin ? skin rash , pigmentation "candida,vitligo ,addison" , skin/nail infection?***
  - ✓ ***joint pain/swelling ? any limitation of movement ? backache?... "diabetic arthropathy***
  - ✓ ***any swelling in the skin (looking for atrophic changes of insulin)?***
  - ✓ ***Any neck swelling ? hoarseness of voice? Dysphagia ?...thyroid problem.***

GROWTH hx .

- ***growth : Any concern regard his growth?***
- ***Weight :***
  - ✓ ***Any change in his weight recently ? when discover ?***
  - ✓ ***Seek any medical advice for weight loss? Type of advice – NGT feeding? Response of intervention ?***
  - ✓ ***Dietien plan and F/UP ? growth chart ?***

NUTRITIONAL hx (seek for compliance of food)

- ***Is he breast fed " protective ", or formula "increase risk "?***

- ***What type of meal ? how many meal / snack ?***
- ***Any dietien involve ?***

PAST HX:

- ***When , where , by whom , how present ?***
- ***how diagnosed ,***
- ***hospitalize or not***
- ***how treated***
- ***number of DKA , hypoglycaemia ?***
- ***f/up and indicator of control : looking for complication and ass. autoimmune***
  - ✓ ***regular f/up or not? Have you diary?***
  - ✓ ***Who follow ?***
  - ✓ ***What they did in f/up ?***
    - ***weight and height measure , HB a1c , TFT.***
    - ***urine anylasis for proteinuria (nephropathy).***
    - ***Vision f/up.(retinopathy).***

DRUG HX (seek for compliance of drug):

- ***type of insulin ? dosage of insulin? any recent change in dose or type of insulin ?***
- ***who given ? time of given insulin?***
- ***Storage of insulin?***
- ***Complication of insulin : is he develop any changes at site of injection ? is the site changeable – every 3 week ?***
- ***last HbA1 C , diary of blood sugars ,frequency of glycosuria.***
- ***If hypothyroid ----thyroxine tabe (dose , S/E)***

COMPLETE PAST HX :

- ***no. of hospital admission ? where " picu- ward ", and for what ?***
- ***previous hypoglycaemia ?***
  - ✓ ***when discover – morning , afternoon or night esp." nocturnal " ?***
  - ✓ ***what happen as consequences – loss of conscious , seizure or only sweating and palpitation ?***
  - ✓ ***how manipulate – is receiving sweet , fruits , glucagon or not? , shifted to hospital or not? Admitted or not ? .***
- ***previous DKA….admision***
- ***any h/o anaemia " pernicious anaemia ".***
- ***h/o blood transfusion ?***
- ***any h/o surgical operation ?***

NEONATAL HX: any concern regard preg., delivery and after delivery?

VACCINATION HX : any concern regard his vaccination. Routine , extra vaccine .

DEVELOPMENTAL HX: any concern regard his development.

Pubertal hx.

Menstrual hx.

FHX :

- ***of DM 1,2 , hypothyroidism , coelic , Addison , vitligo, renal disease.? anaemia .?***
- ***Is your husband your relative?***
- ***How many children you have?***

SOCIAL HX:

- ***Impact of the disease on family : frequent admission, action plan of family.***
- ***Impact of the disease on pt:***
- ***Impact of the disease on school:***
  - ✓ ***Days missing ? insulin in school ? diet in school ?***
  - ✓ ***friends ? any bulling at school?***
  - ✓ ***Role of school nurse and teacher ?***
  - ✓ ***Action plan of school when hypos occur ?***
- ***Any social support ? finance and health insurance.***
- ***Smoking ?***

Discussion

Def of DM (non – ketotic)?

- ***Elevated blood glucose with no ketonuria / blood ketones :***
  - ***Symptoms + RBS >/= 11 mmol/l***
  - ***Or symptoms + fasting plasma glucose >/= 7 mmol/l.***
  - ***RBS >/= 11 mmol/l on 2 test on 2 separate days (e out symptoms).***
  - ***FBS >/= 7 mmol/l on 2 test on 2 separate days (e out symptoms).***

Def of DKA :

- ***Symptoms :***
  - ***weight loss , thirst , polyuria , abdominal pain / vomiting.***
  - ***tachypnea , signing respiration (kussmal breathing) , odour of ketones.***
  - ***Dehydration , drowsiness , coma.***

  +
- ***Biochemical signs :***
  - ***Ketone in urine and blood***
  - ***Blood glucose (> 11 mmol/l)***
  - ***Academia (PH < 7.3)***

What investigation?

1. ***TO ALL CASES(new and k/c)***

- ***CBC***
- ***RBS , HbA1C.***
- ***BLOOD GAS .***
- ***S/E –RFT- LFT***
- ***BLOOD KETONES***
- ***Urine for : KETONES , C/S , micro albuminaemia.***

2. ***INVESTIGATIONS TO NEWLY DIAGNOSED :***
   - ***TFT , TSH , T3 , T4.***
   - ***Insulin levels and C-peptide level.***
   - ***Thyroid and coleic antibody test***
   - ***Islet cell antibodies.***
   - ***GAD antibodies.***
   - ***Ig A.***

What is your treatment plan?

- ***Multidisciplinary team***
  - ***Pediatritian***
  - ***Endocrinologist***
  - ***Dietetion to manage her main problem***
  - ***Nephrologist to manage renal problem***
  - ***Social service v.imp b/c of family circumstances***
    Role of social worker in school ?
  - ***Psychologist to support her and manage her depression at home , school , with her peers. Three important principles :***
    - ✓ ***Staying involved***
    - ✓ ***Expressing understanding***
    - ✓ ***Working as team.***
  - ***Ophthalmologist for vision f/up.***
  - ***Liaison b/w school and home , senior teacher should know about the disease and to help pt.***

Different regimens of insulin:

- ***Twice daily (most common) : split /mixed regimen (2/3….1/3 rule) ,***
  2/3 intermediate acting "zinc " + 1/3 short acting "reg.".
- ***Twice daily with additional short or ultrashort.***
- ***Basal - bolus (2nd common) : 3 pre meal short or ultra short + longer in evening."***
  Glargine "
- ***Premixed (biphasic) insulin : for non compliance.***
- ***Insulin pumps.***

TYPES OF INSULIN :

- ***Rapid acting (or ultrashort acting) …(lispro / aspart / glulisine "apidra")***
- ***Short acting (regular / soluble).***
- ***Intermediate acting (isophane insulin – zinc)***

- ***Long acting (basal insulin) (glargine "lantos " / determir).***
- ***Biphasic insulin***

Type of insulin	*Onset*	*Peak effect*	*Total duration*
Rapid acting	*10 min*	*1 hrs*	*3 – 6 hrs*
Short acting	*30 min*	*2-5 hrs*	*6 – 8 hrs*
Intermediate	*2 hr*	*6-8 hrs*	*16 hrs*
Long acting "glargine"	*2-4 hr*	*Peakless*	*20 – 24 hrs*
Biphasic	*30 min*	*1-12hrs*	*16 – 24*

Emergency management of hypoglycaemia :

- ***If RBS is less than 2.6 mmol/l and GCS less than 8 :***
  - ***IM glucogon inj. and seek for help.***
  - ***IV ACESS : take sample for investigations , iv bolus 10% and maitaince***
  - ***Recheck , if still low RBS ….iv hydrocortisone 4 mg/kg.***
  - ***Then hydrocortisone infusion***
  - ***Then increase glucose content to 14 – 20%***
  - ***Consider : octerotide , diazoxide , glucagon (hyperinsulinism if glucose load more than 10 mg/kg/min).***
- ***If RBS is less than 2.6 mmol/l and conscious "GCS" more than 8 " and well :***
  - ***immediate feeding***
  - ***recheck after 10 min.***

Treatment of DKA :

- ***Admission***
- ***IVF according to level of dehydration.+ KCl***
- ***Insulin infusion 0.05 – 0.1 units/kg/hr (after 1st hour of fluids).***
- ***Correction of acid base balance .***
- ***Monitoring of : RBS , neurological status , S/E.***

How follow and montoring of diabeteus ?

- ***At time of diagnosis :***
  - ✓ ***Hb a1c every 3-4 month.***
  - ✓ ***Thyroid disease at diagnosis and yearly.***
  - ✓ ***Coleic disease at diagnosis and every (3-5 yrs).***
- ***Once a year :***
  - ✓ ***Bp , micro albuminuria and retinopathy annually from age of 12 yrs.***
  - ✓ ***Thyroid disease.***
  - ✓ ***Review foot care.***
- ***At every clinic visit : (every 3-4 month)***
  - ✓ ***height and weight .***
  - ✓ ***HbA1c***
  - ✓ ***Check injection site.***

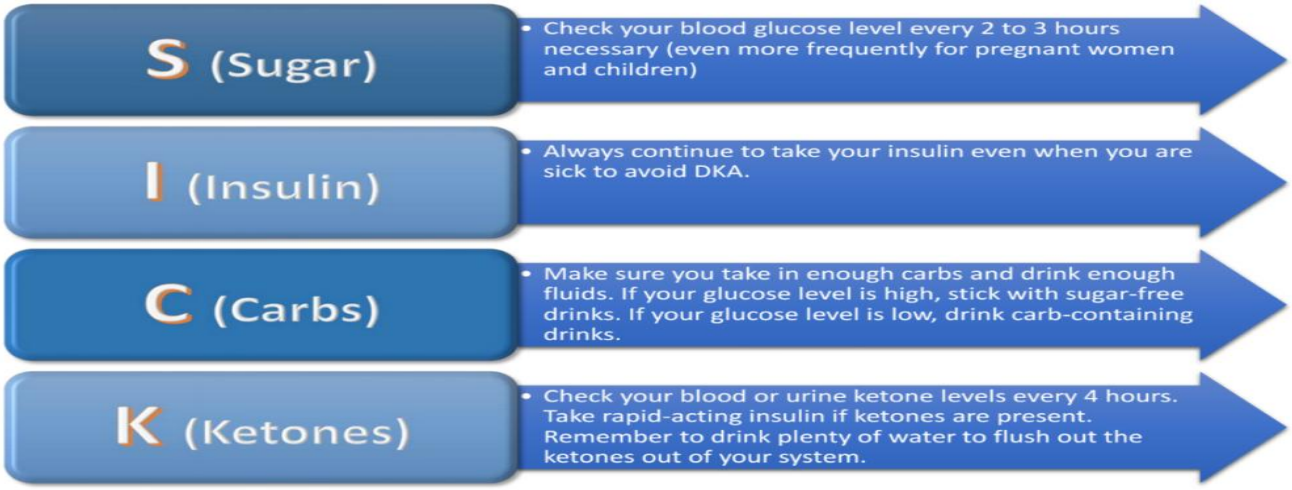
What is glycaemic index ?

- ***This measures how rapidly afood stuff can raise the blood sugar in the blood.***

What is the sick day in IDDM? Intercurrent illness

a. ***If no vomiting :***
   - ***Check RBS every 2 hrs. (if RBS above 15 mmol/l = 270 mg/dl) :***
     - ***Check for ketonuria .***
     - ***Avoidance of carbohydrates .***
     - ***20% stat dose of total insulin requirement as short acting insulin every 6 hours , and stop longer acting insulin temporarily.***

b. ***If vomiting or ketonuria :***
   - ***Rbs hourly.***
   - ***Admission to hospital may be appropiate***


S (Sugar)
Check your blood glucose level every 2 to 3 hours necessary (even more frequently for pregnant women and children)
I (Insulin)
Always continue to take your insulin even when you are sick to avoid DKA.
C (Carbs)
Make sure you take in enough carbs and drink enough fluids. If your glucose level is high, stick with sugar-free drinks. If your glucose level is low, drink carb-containing drinks.
K (Ketones)
Check your blood or urine ketone levels every 4 hours. Take rapid-acting insulin if ketones are present. Remember to drink plenty of water to flush out the ketones out of your system.

Short stature and obese (exam jeddh5/2015)

⍙.⍙. of short stature :- as general.

a. *Dysmorphic : russle silver , noonan's , turner , down , prader willi ,pseudo hypo parathyroidism. Sanjet-sakati.*
b. *Not dysmorphic :*
    1. *Proportionate: both trunk and limb are short*
        - *constitutional , familiar/genetic ,*
        - *IUGR , ch. Malnutrition .*
        - *celiac disease ,*
        - *chronic disease (CRF , CLD).,*
        - *GH def. , hypogonadism , hypothyroidism*
    2. *Disproportionate : either short limb or e short trunk.*
        - *Oesteogensis imperfect (short limbs).*
        - *Achondroplasia (short limbs)*
        - *Rickets (short limbs)*
        - *Metabolic and storage disorders e.g : MPS (short spine).*

Case : ali is 12 yrs old boy , ali was born at term with no complications . birth weight was 3 kg , length of 50 cm . there were no postnatal complications. Mother noted since the age of 9 yrs that he is short comparing him to his peers . in school his friend started recently bulling him because of short stature . his parents are tall and no family h/o of short stature. His height is 125 cm and weight is 30 kg , and there is no obvious dysmorphic features . can you please assess him for organic causes of short stature.

Task : take rest of essential history from the mother and discuss the management with the examiner.

DD for the short stature (above scenario):

- ***Idiopathic /phsiologcal :***
    - ***Familial.(no delay in bone age + normal weight)***
    - ***Constitutional (delay bone age + normal weight)***
- ***Endocrine : (delay bone age + normal/over weight)***
    - ***Growth hormone deficiency.***
    - ***Acquired Hypothyroidism***
    - ***Hypopitutarism.***
    - ***Cushing syndrome***
    - ***Pseudo hypoparathyrodism.***
- ***Chronic illness : (delay bone age + under weight)***
    - ***Celiac disease***
    - ***Cystic fibrosis***

- ***IBD.***
- ***CLD , CKD , CHD.***
- ***Social neglecance.***

<u>What to ask in short stature:</u>

1. *Growth Hx in detail :*
    - *Time at which height become Static ? any preceding illness ? is it significant short stature? Did you check in clinic? Anyone told you weight and height in which centile ?* ***Have you any growth chart ? what about last height and weight?***
        - ✓ ***Normal weight ……physiological .***
        - ✓ ***Normal/overweight ……..endocrinopathy.***
        - ✓ ***Underweight …… chronic illness.***
    - *Any concern regarding his parent height? any one did MPH?*
    - *did you have f/up? Any f/up With doctor of growth ? what intervention he did? What is the effect of intervention?*
2. *systemic review : Clinical features of Celiac D. / C.F. / Ch. Illness .*
    - *G.I.T. symptoms :*
        - ✓ *What about bowel habbit?*
            - *Constipation ……hypothyroidism , loose stool …… CF , coeliac*
            - *Stool frequency , consistency , and color ? does it contain blood ? is it difficult to flush ?*
        - ✓ *Deos he vomit ? if vomiting… frequency ? character ? is it ass with food ?*
        - ✓ *is she nauseated "anorexic "?*
        - ✓ *What about her appetite ?*
        - ✓ *Any increase in her tummy size ?*
        - ✓ *Hx. Of jaundice " chronic liver disease"?*
    - *RS symptoms :*
        - ✓ *is he had cough ? difficult of breathing ?*
        - ✓ *hx. Of recuurent otitis media "immunodef ."*
    - *General :*
        - ✓ *activity " lethargy …..hypothyroidism"?*
        - ✓ *sleepness? Pallor?*
    - *MSS :*
        - ✓ *any skin spot? Joint pain and swelling " in immunodef. Disease"?*
        - ✓ *any asymmetry of the body or extra finger " russel silver "?*
    - *CVS:*
        - ✓ *any swelling in feet ? difficulty of feeding / or sweating ass. With feeding ?*
        - ✓ *bluish discoloration of body?*
    - *CNS : (to r/o hypothalthamic / pitutiry space occupying lesion)*
        - ✓ *Headache , vomiting , any visual problems ?*
        - ✓ *any abnormal movement ?*
        - ✓ *any weakness in any part of the body " bulbar and pseudobulbar palsy"?*
    - *Urinary symptoms :*
        - ✓ *any concern regarding his urination ?*
        - ✓ *how frequent went to pathroom? Polyuria ……CRF , RTA.*
        - ✓ *colour and smell of urine ?*

3. *pubertal hx. :*
    - *is he develop any signs of puberty " constitutional …pubertal delay".*
4. *Past history:*
    - *previous illness ? kidney , liver ,heart , celiac*
    - *hx. Of head trauma.*
    - *Hx. Of head surgery.*
    - *hx. Of jaundice " ch. Liver disease" ? hospital admission ?*
5. *Perinatal hx :*
    - ✓ *any concern regarding his pregnancy ? any infections*
    - ✓ *what is the mode of delivery?*
    - ✓ *Was he very small when he was born " SGA"?*
    - ✓ *Is he born earlier than expected date ?*
    - ✓ *Any difficulty after delivery ? perinatal asphyxia ….. congental GH defenciency.*
    - ✓ *Any neonatal hypoglycaemia , persistant jaundice , micropenis …." GH def.".*
6. *Drug hx :*
    - ✓ *what is current medicince ?*
    - ✓ *any hx. Exposure to irradiation.*
    - ✓ *any drug allergy ?*
7. *Vaccination : is he took his vaccination up to date ? any extra vaccine ?*
8. *development : developmental delay ass e prader willi.*
    - ✓ *any concern regarding his development ?*
9. *Nutritional HX. : (to r/o under nutrition)*
    - ✓ *How many meal /day ? how much amount ? have you any food diary ?*
    - ✓ *How taking feed orally or NGT ? who is given feed?*
    - ✓ *Any H_x. of Food allergy .*

10. *Family Hx:*
    - *Any similar condition ? f/h of hypothyroid , IBD , COELIAC*
    - *Family hx of short stature " familial"*
    - *fx pubertal delay " constitutional ".*
    - *Are parents health status was ok? Any hx of psychiatric illness?*
    - *Is your husband is your relative ?*
    - *how many member in the family " how many children you look after "?*
11. *Social : psychosocial dwarfism*
    - *Personal :*
        - ✓ *job of the parents ? education of the parent ? what is age of parents?*
        - ✓ *Is your husband life with you ? stable marriage ?*
        - ✓ *whose taking care of patient " may be mother is busy "? anyone else helping in taking care of him?*
    - *Economic :*
        - ✓ *Is the income satisfy your needs ?*
        - ✓ *Any Finical support ?*
    - *Environment :*
        - ✓ *Smoking : anyone in the family smoking ? or alcoholic ? or drug abuser?*
        - ✓ *Housing : rented house or owner ? how many rooms you have ?*
        - ✓ *Animals : have you any animals at home?*
    - *Impaction of the disease on family ?*
        - ✓ *Social isolation ?*

- *Impaction of the disease on baby ?*
  - ✓ *Growth , development , activity ?*
  - ✓ *Schooling ? bulling at school b/c short ?*

Discussion

What we mean by short stature ?

- *Height is less than 3rd centile or less than 2 SD mean of that age and sex , or*
- *Growth velocity less than 25th centile over 6-12 month.*

What is difference b/w FTT and short stature ?

- *FTT affect greatly weight gain than height , and the linear growth affected usually 2ry.*
- *Short stature affect mainly liner growth " height".*

What factors affect growth ?

- *Nutrition / thyroid …….. 0 – 2 yrs.*
- *Growth hormone ……2 – puberty.*
- *Sex hormone / GH /thyroid h. ……..pubertal age.*

WHAT DIFFERENCE b/w familial and constitutional short stature ?

Features	*Familial*	*Constitutional*
Family hx.	*Of short stature*	*Of delay puberty*
Parent stature	*Short (one or both)*	*Average*
Puberty	*Normal*	*Delay*
Bone age and chronological age	*Bone age = chronological age i.e no bone delay.*	*Chronological age more than bone age i.e bone delay.*
Final height	*Short but normal for target height*	*Normal due to normal growth in pre-pubertal age.*
Height velocity	*Less than normal*	*Normal*

Management:-

1/ Investigations :

- *Stool analysis : for parasite , steatohrea ,*
- *Urinanalysis : for protein , nitrates and blood " microscopy " , ph , osmolarity*
- *C.B.C. and film …… anaemia , chronic disease.*
- *ESR……. IBD.*
- *Iron studies.*
- *Chemistry :*
  - ✓ *urea , creatinine , S/E ….. RFT*
  - ✓ *bicarbonate , Ca , ALP …. rickets*

- ✓ *albumin , liver enzymes …..Ch. liver disease.*
- *Thyroid function test " TSH , T3 , T4 " ….. For hypothyroidism .*
- *S. growth hormone binding protein -3 level (IGF 3) more reliable than IGF 1 because NOT affect by malnutrition.(level 2 investigations)*
- *S.growth hormone level after insulin stress test.(level 2 investigations).*
- *Screen for coelic (tissue transglutaminase autoantibody and IgA).*
- *Screen for cystic fibrosis (Sweat Test).*
- *Imaging :*
  - ✓ *c-x-ray .*
  - ✓ *x-ray of LT. wrist …. bone age*
  - ✓ *GIT imaging .*
  - ✓ *Pelvic u/s for turner …see ovaries.*
  - ✓ *Neuro imaging (level 2 investigation).*
- *endoscopy , small bowel biobsy*
- *karyotyping to r/o turner syndrome in girl.*

2/ Multidisciplenary team : can be manage as outpatient :

- *counsil parents for physiological causes*
- *dietry advice for undernutrition , coeliec disease.*
- *Treat the cause :*
  - ✓ *Celiac lifelong gluten free diet.*
  - ✓ *Hypothyroidism : thyroxine lifelong*
  - ✓ *Growth h. def. : rh GH 0.1 U/kg/day SC.*
- *Social worker , school nurse , psychologist*

What are causes of growth hormone def. ?

- *Congental : perinatal asphyxia , CNS malformation.*
- *Acquired : idiopathic , trauma , tumor , surgery , CNS infection , radiation.*

What are indications of growth hormone ?

- *Chronic renal failure.*
- *Prader willi*
- *Turner syndrome*
- *Growth hormone def.*
- *SGA not reach 5^{th} centile by 2 yrs.*

How investigate for growth hormone def.?

- *Growth hormone level in sleep and after provocation with insulin , clonidine , propanlol.*
  - ✓ *Level more than 10 ng/ml excludes GH def.*
  - ✓ *We say GH def. if : less than 10 ng/ml in response to 2 GH stimulus , or less than 18 ng/ml in response to combined arg-GHRH stimulus.*
- *IGF -1 and IGF BP-3 :*
  - ✓ *If both normal and growth hormone normal ……. Normal*

- ✓ *If both are low may be due to growth hormone def or GH resistant :*
  - *GH resistant (1ry IGF -1 def.): if growth hormone is high or normal*
  - *GH def.: if growth hormone also low.*

What are side effects of GH ?

- *Pseudo tumor cerebri*
- *Hyperglycaemia*
- *1ry hypothyroidism*
- *Gynecomystia.*
- *Liver abnormalties.*
- *Acute pancreatitis*
- *Adrenal insuffiency .*

Important definitions in short stature:

- ***Chronological age – Actual age of the child.***
- ***Height age – it's the age at which the height of the child is at 50th centile.***
- ***Bone age - is an indicator of skeletal maturation.***
- ***Target MPH: F+M/2 +6.5 for boys and -6.5 for girls.***
- ***Then plot the result on Growth Chart at Age 20 to form Family chart ±10 to form centile***

Approach to short stature (now in Heevi Hospital)

1- Height (CDC) ↓ 3rd centile

2- Family Chart: HT ↓ MPH

3- Bone age evaluation by greulich and pyle method.

4- BA < HA<CA (Pathological Short Stature)

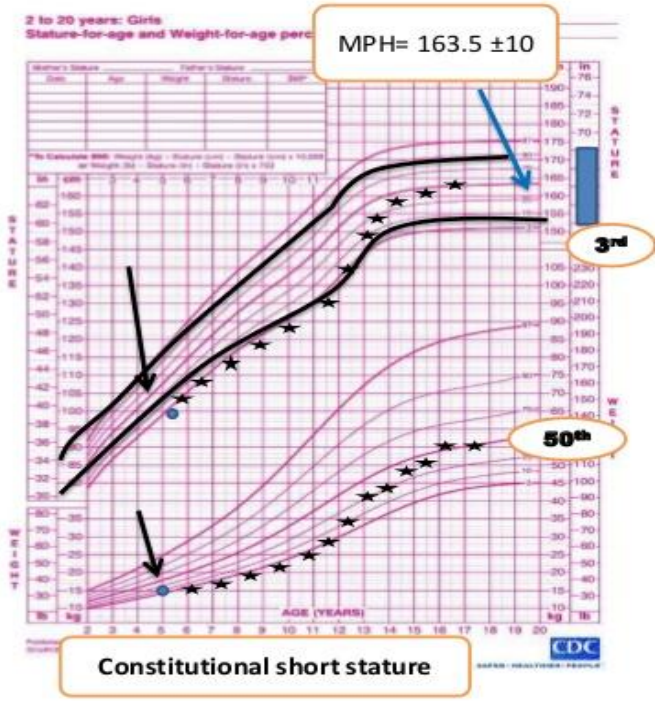
5- Investigations: level 1 general then Level 2 TFT

6- Provocative tests (GH stimulation tests)&IGF

Familial Short Stature	Constitutional Short Stature	Pathological Short Stature
↓3rd Centile	↓3rd Centile	↓3rd Centile
↔ MPH	↓ MPH	↓ MPH
BA = CA Normal	BA = Height Age < CA	BA < HA<CA

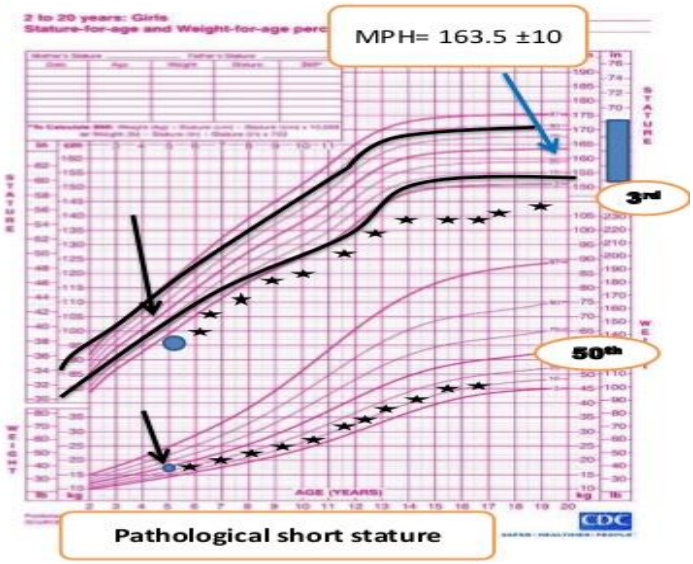
Is she short?

- Example: 5.5 Y – girl
- Ht= 98 cm --Wt=13 Kg
- Father Ht= 175 cm
- Mother Ht= 165 cm
- MPH= 170-6.5=
- 163.5 ±10
- HT Age=3.5 years
- Bone Age=3.5 years



Is she short?

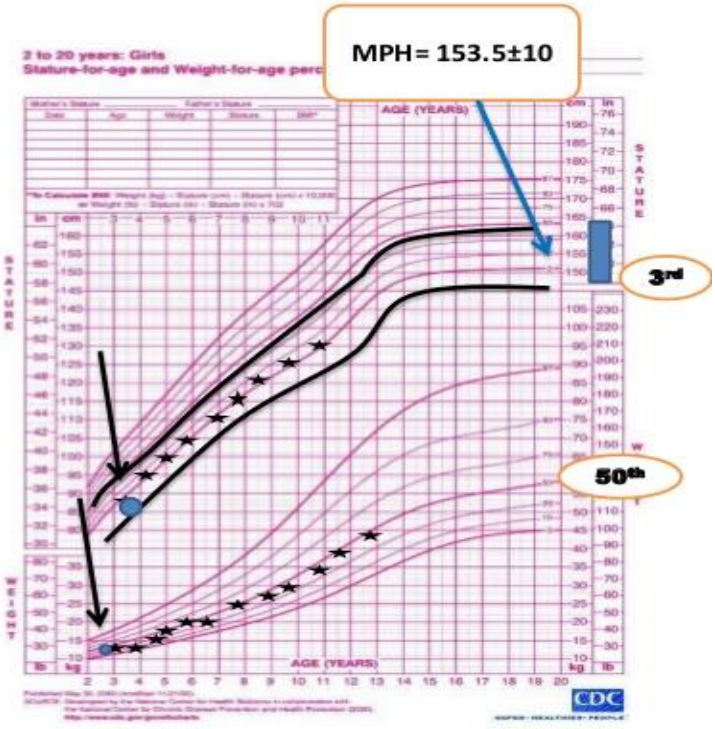
- Example: 5 Y – girl –
- Ht= 98 cm --Wt=15 Kg
- Father Ht= 175 cm
- Mother Ht= 165 cm
- MPH= 170-6.5=
- 163.5 ±10
- HT Age=3.5 years
- Bone Age=1 year



Pathological short stature

Is she short?

- Example: 3 Y – girl –
- Ht=85 cm --Wt=10 Kg
- Father Ht= 165 cm
- Mother Ht= 155 cm
- MPH= 160-6.5=
- 153.5
- Plot on age 20
- 153.5 ±10
- 143.5 – 163.5
- Bone Age = normal



Familial short stature

CYSTIC FIBROSIS

Scenario : K/C cystic fibrosis .

Sarah 7 year old Saudi girl , k/c of cystic fibrosis , she came 5 days back with fever , cough and reduce appetite. Please take history to solve sarah problem.

- *DD of chesty patient. (K/C cystoic fibrosis):*
  - *CF e Poor compliance to treatment*
  - *CF e Colonization of pseudomonas.*
  - *CF e allergic bronchopulmonary aspireglosis.*
  - *CF e Berkholia cepacia infection*
  - *CF e Exacerbation of b.asthma.*
  - *Bacterial / viral pneumonia*
- ***What to ask in history of cystic fibrosis ?***
  - ***HPI AND SYSTEMIC REVIEW:***
  - ***R.S :***
    - ***When become chesty ?***
    - ***What are the main symptoms.? Cough / SOB***
    - ***Anylasis of cough : when start? Dry or productive ? if productive , colour and amount of sputum." If dusky sputum ….berkholia cepcia"***
    - ***musical sound (wheeze) ? Triggers if wheezy episodes.***
    - ***Aggravating factor ? relieving factor ?***
  - ***General : ass e fever? Exercise tolerance at moment. , normal exercise tolerance, sleep ness effect.***
  - ***GIT :***
    - ***What about bowel habbit ?***
      - ✓ ***stool frequency? Consistency ? amount ? odour ?***
      - ✓ ***difficult to flush?***
    - ***Appetite ? vomiting ? nausea ?***
  - ***MSS : any joint pain ? skin spots?***
  - ***CVS : increase in heart beat ?***
  - ***CNS : any abnormal movement ? headache ? any concern regarding her vision or hearing ?***
  - ***URINARY SYSTEMS: any concern regarding his urination?***
  - ***PAST HISTORY :***
  - ***Detaial of chronic illness : when , where , who diagnosed , how present ?***
  - ***how diagnosed (what investigation done)?***
  - ***Is he need hospital admission? No. of hospital admission/year – elective and emergency ? where to ICU or ward?***
  - ***What treatment given at time of admission ?***
  - ***Compliance with F/UP :***
    - ***Any regular f/up?***
    - ***With whom u follow ? pulmonolgist ,physiotherapist , dietien***

- ***result of last lung function test ?***
- ***result of last sputum sample or cough swab ?***
- ***any details re colonization or antibiotic resistance.***

- ***Drug history (Compliance of drug to lung and GIT) :***
  - ***What drugs used ? physiotherapy ,antibiotic , cerion , , omeprazole.***
  - ***Physiotherapy how many time/day ? who do it ?***
  - ***How much the dose ? has the dose of pancreatic enzymes need to be adjusted?***
  - ***Prophylactic antibiotic frequency? Through porta-cath.***
  - ***allergy to drugs***
- ***Nutritional history :***
  - ***what type of food ? any especial type of food?***
  - ***how many meal/day ?***
  - ***Through which taken feed " orally ,NGT , or gastrostomy tube "?***
- ***growth:***
  - ***any concern regarding his growth ?***
  - ***when you notice his weight is reduce ? is it significant ?***
  - ***did you seek any medical advice ?***
  - ***any f/up for his weight and height ?***
  - ***have you centile chart for his height and weight?***
- ***Remaining of past hx :***
  - ***Previous illness :Other complications DM , infertility "if old" .***
  - ***any surgical intervention?***
  - ***Any blood transfusion ?***
- ***Allergic hx : may be exacerbation of b.asthma?***
  - ***allergy to food ?***
  - ***allergy to drugs?***
- ***Birth and neonatal history .:***
  - ***Any antenatal diagnosis ? by vilous sampling or aminocentasis.***
  - ***any concern regarding neonatal period? Like not passed stool or any surgery done for him?***
- ***Vaccination :***
  - ***additional vaccine esp. pneumococcus., influenza., heamophilus .***
- ***Developmental history :***
  - ***any concern regard his development?***
- ***Family history :***
  - ***any similar condition ?***
  - ***is your husband is your relative?***
  - ***How many children you have ? all ok and well***
- ***Social history :***
  - *impaction of the disease on family:*
  - *impaction of the disease on pt : school performance /missed school.*
  - *Personal : job and education of parents ? Whose taking care of pt?*
  - *Economic : income satisfy needs ? any financial support?*
  - *Transport Access for hospital and f/up.*

- *Environment : smoking , housing , animals.*

What you think the cause of deterioration ?

Any more question or agenda not cover?

General Principle:-

1. *Introduce Yourself (Hello I'm Dr.mohammed a Registrar in Pediatric working in this Hospital.*
2. *Check for Pt &Mother (I believe that you are the Mother of sarah. Could I know your good name please?)*
3. *Welcoming (Thank you for coming to discus sarah condition)*
4. *I received letter from GP that SARAH K/C of CF , and she develop fever , cough and wheeze and reduce appetite am I right ? So , can you tell me more about this?*

Chief Complaint:-

Mother : yes you are right, her temp start to raise up and also develop cough and musical sound from her chest

H_X of Presenting Complaint:-

- ***Analysis of fever :***

- *For How long she has develop this fever ? 3days.*
- *how you know temp is high? By touch by hand.*
- *which time of day it's increase (at day time or at night)?*
- *What was the course of it (is it sudden or gradual onset)?*
- *what thing u did brought temp down ? no drug relieve it?*
- *u notice anything make it more?*
- *Is it associated with any rigors? or Sweating ?*
- *MSS : Is it ass with skin spots? Or Joint pain "CF related arthritis "?*

- ***Analysis of cough (and other RS symptoms)***

- *Can you tell me more about the cough ? (open q.)*
  - ✓ *When cough started ?*
  - ✓ *Is it dry or productive ? if productive cough what is amount , colour "is it contain blood " , odour , of sputum?*
  - ✓ *Is it more at night or during the day? Is the cough awaken pt. at night?*
  - ✓ *anything relieving this cough ? anything made it worse? Is it more with exercise ? is the cough affect exercise tolerance?*
- *Associated symptoms :*
  - ✓ *Is it associated with musical sounds?*
  - ✓ *Is the cough associated with difficult of breathing? Triggering factor , relieving factor ? association with time /day? Is the difficult of breathing during rest or related to exercise?*
  - ✓ *Is it associated with chest pain ?*

- ✓ *Is it ass with change in color of her lips?*
- ✓ *Any nasal block ? running nose ? sneezing ? discharging ear or ear pain ?*

❖ ***Anylasis of reduce appetite (growth and GIT anylasis)***

- ***GIT :***
  - *Is this reduce appetite recently or before ?*
  - *Is she feel sick (nausea)? Is she thrown up (vomiting)?*
  - *What about her bowel habit ? is it difficult to flush ? odour , colour ?*
  - *Is it ass with abdominal pain*
- ***Growth hx :***
  - *Is it ass with loss of weight? If yes When you noticed?*
  - *is it significant ? how much ? you seek medical advise ? what intervension ? is it effective or not ?*
  - *Any growth chart for her?*

Nutritional hx :

- *Is she breast fed or bottle fed?*
- *Any concern regarding her feeding ?*
- *What type of food ? any especial type of food ?*
- *How given food through NGT , oral or gastrostomy ?*
- *Is she on regular follow with dietien.?*
- *Does sarah has allergy to any food* ***?***

Systemic review :

- *CVS : is she aware of her heart beat ? any attack of falling down ?*
- *CNS : is there any abnormal movement? Weakness of part of her body ? is she feel headache ? loss of conscious ness ? any concern regarding her vision or hearing?*
- *Urinary symptoms: any concern regarding her urine?*

past medical history : I know that sarah k/c of CF , can you tell me more about it?

i. *When she was Diagnosed? .*
ii. *Where was Diagnosed? In arar central hospital.*
iii. *Who diagnosed him? Pediatric pulmonlogist*
iv. *What was the presentation on admission?*
v. *Is she need hospital admission at time of diagnosed ? where was admitted – to high dependency unit (ICU)or the wards ? how many days admitted?*
vi. *What investigations done for her ? they did c-x-ray , and blood test., prick heel test.*
vii. *what medication received ? Any surgical operation done for her ?*
What medication on discharge ?

viii. *Is she on regular f/up ?*

- *Whose is Following her(pediatric pulmolongist)? And what type of help offered? Whose other following her ? dietien and physiotherapist.*
- *Are u doing regular sputum c/s for her? What is last sputum c/s for her?*
- *Are u measuring lung function test regulary? What is the last LFT?*
- *Number of GP AND HOSPITAL VISIT IN LAST YEAR?*

ix. *Other past history :*

- *Any history of previous illness? Any chronic constipation or joint pain ?*
- *is she need any more admission after that?*
- *History of transfusion ?*
- *Any history of DM? Any history of nasal polps? Any swelling coming from his rectum ?*
- *Did for her any skin prick test?*

Drug history :? compliance to treatment

- ***What drugs sarah is taking for cystic fibrosis ?***
  - ***Physiotherapy : how many times physiotherapy per day ? by whom ?***
  - ***Pancreatic enz : how much dose / meal or snack ? given by whom medication ? recent adjustment of crions recently? Side effects.***
  - ***Any prophylactic antibiotic ? how frequently getting ? through iv canula or porta cath?***
- ***Is she having allergy to any drug?***
- ***What other drug currently received?***

Allergic history : excacrebation of B.asthma

Neonatal history :

- ***Any regular f/up during pregnancy ? any antenatal diagnosis ? aminocentasis , vilous***
- ***Any concern regarding neonatal period?***
- ***Is she breast fed or bottle feeding?***

Immunization H_X:-

- ***What about Vaccination (are they up-to-date)?***
- ***Did sarah take extra vaccine(HIB/Influenza / P.C.V.)?***

Developmental H_X :-

- ***Do you have any concern about his development (like his pears)?***

Family H_X :-(D. D. C. T.)

- ***Any member in the family having similar condition?***
- ***Is your husband ur relative?***
- ***How many children u have?***

Social H_X :-(P. E. E.)

- ***Impact of the disease on pt:***
    - ***Effect of symptoms and disease on school performance:***
        - ✓ ***In which class sarah ?***
        - ✓ ***is her performance affected by disease ?***
        - ✓ ***is she missed school?***
    - ***Is the disease affect her exercise or activity ?***
    - ***Is the disease affect her development or growth ?***
- ***Impact of the disease on family:***
    - ***What is the Job of ur husband? And of u?***
    - ***Is the income satisfy ur needs?***
    - ***Any other Financial support ?***
    - ***Any financial burden b/c of the disease?***
    - ***Whose taking care of sarah?***
    - ***Are they become socially deprived?***
- ***Environmental H_X :-***
    - ***Smoking :***
        - ***any one at home used to smoke ? yes father***
        - ***is he smoking inside the home or outside? Outside.***
    - ***Housing :***
        - ***Is it ur own house or rented?***
        - ***What about furniture and flooring of the house?***
        - ***Any new reconstruction at home?***
        - ***How many rooms at home?***
        - ***Is the rooms well ventilated?***
    - ***Animals:***
        - ***U have any animals at home?***

- ***Acess to local doctor:***
    - ***Have u ur own car ?***
    - ***How can Transporting Pt for his F/Up ?***
- ***Coping with the disease :***
    - ***Whose doing physiotherapy at home?***
    - ***What u do if pt develop complications?***

- ❖ ***What is your Biggest Concerns/worry ?***
- ❖ ***what u think is the cause of deterioration.?***
- ❖ ***Do you feel there is an agenda we didn't cover today?***

DISCUSSION

What are the problem list?

- *Acute illness - Cystic fibrosis.*
- *Poor apetite.*
- *Poor weight gain.*
- *Excerise intolerance*
- *Missed school.*
- *Family Spend more time with the baby – not enjoying social life.*

What is the DD ?

- *Pneumonia*
- *Viral infection.*
- *Pseudomonas colonization.*
- *Allergic bronchpulmonary aspirglosis.*
- *Exacerbation b. asthma.*

What is the cystic fibrosis ?

- *It is a multisystem disorder charcterise by dysfunction of exocrine gland resulting in chronic supprative lung disease , malabsorption , chronic liver disease and infertility.*

What you can tell about genetic of cystic fibrosis ?

- *A.R(Ch—7).*
- *Carrier. risk = 1/25*
- *Abnormal Cystic Fibrosis Trans membrane conductance Regulator (C.F.T.R.) (c AMP mediated chloride channel dysfunction) causing inability to secrete chloride , sodium and water from cells lining airway into airway lumen , leading to viscid secretion (in lungs , pancrease , biliary tract and reproductive tract.) and opposite occurring in skin , chloride can't enter the cell (leading to increase high sweat chloride).*
- *δF508 gene (common mutation –deletion of single phenylalanine – 75%).*

How can we diagnose CF ?

- *Antenatal chorionic villous sampling (@ 8 – 10 week) , aminocentesis (@ 16 – 18 week) for gene analysis (if family history of CF)*
- *Neonatal screening (not diagnostic) of C.F. is by:*
    - ***Guthrie test looking for Immuno reactive Trypsin** (I.R.T.)→ reflect Pancreatic enzyme defect.*
    - *Stool for …..reflect pancreatic enzyme defect.*
- *Genetic analysis : need 2 mutation of CFTR gene . used for :*
    - *diagnosed cases (to provide more information on geno/phenotype).*
    - *To confirm diagnosis when sweat test is equivocal."40-60".*
- *Sweat Test.: (definitive diagnosis) using pilocarpine iontophoresis(to stimulate sweating).:*
    - *Test positive when 2 sweat chloride conc. > 60 mmol/l*
    - *Borderline …….40-60 (if 2test borderline …..do gentic analysis)*
    - *Normal if less than 40*
- *Others test :*

- *CBC , CRP , LFT , RFT , SE*
- *Blood c/s .*
- *Cough swab or Sputum C/S.*
- *Imaging :*
  - ✓ *chest X-ray to radiologically grading lung disease (if more than 20 indicate severe disease according to norman scoring system).*
  - ✓ *abdominal x-ray.*
- *Peak flow , Lung Function test and Compare With Previous One.*
- *IgE for aspriglllosis.*

<u>Criteria of diagnosis: criteria A + B :</u>

- ***Criteria (a) CF finding , any of the following :***
  - *Positive family history , or*
  - *Positive neonatal screen ,or*
  - *Typical clinical features of CF.(FTT, recurrent chest infections , meconium ilus)*

  (Plus)
- ***Criteria (b)*** *lab evidence for CFTR dysfunction ,any of the following :*
  - *2 Positive sweat test , or*
  - *2 CFTR gene mutations , or*
  - *Positive abnormal nasal potential difference "NPD".*

<u>Management of cystic fibrosis :</u>

- ***aim of prevent progression of lung disease , maintain adequate nutrition and growth .***
- *MDT involve medical staff , physiotherapist , dietician , community nurses , social workers and psychologist* ***. CF team.***

A. <u>Pediatrician and physiotherapist for Respiratory management :</u>

1. ***Peaditrician for prescribe :***
   - ❖ ***IV antibiotics****: for acute infection and prophylaxis.*
     - *1st isolate baby*
     - *Prophylactic iv antibiotics for 2weeks/3months.for colonized pt.:*
       - *If staph …..flucloxacillin*
       - *If pseudomonas ……nebulised tobramycin or colomycin.*
     - *Acute infection : Broad spectrum antibiotics (ceftazidime + gentamycin) till blood c/s came :*
       - *If pseudomonas ….oral ciproflaxcin or (IV ceftazidime /tazosin + gentamisin).*
       - *If brucklia cepacia …. Iv meropenam + isolation.*

   - ❖ ***Nebulized and inhaler treatment*** *:*
   - ✓ *Neb. DNase to digest viscous DNA fragments.*

- ✓ *Neb. Hypertonic Saline 7% : reduce the viscosity of secretions.*
- ✓ *Inhaled brochodilater and inhaled steroids*

2. ***Physiotherapist for :***
   - ❖ ***Physiotherapy of chest.(twice daily)***
     - ✓ *Postural drainage .*
     - ✓ *forced expiratory technique/positive expiratory pressure mask*
     - ✓ *percussion and vibration technique.*
   - ❖ ***Exercise to strength the muscle*** *and prevent re accumulation of secretion.*

B. *Nutrition support (by Dietien) include :*

- *Nutrition → High Calorie & Protein. - NGT/gastrostomy tube can be used.*
- *Pancreatic enzyme supplements –crions (pancreatin= protease + amylase + lipase). + omeprazole for better work of pancreatic enzyme. s/e colonic stricture .*
- *Supplementation of Vit- A.D.E. and vit K (if prolong PT).*
- *Height and weight every 3month.*

C. *Psychological support :* *for patient and family.*

D. ***treatment of complications :***
- ✓ *asthma …….bronchdilators.*
- ✓ *Allergic Broncho Pulmonary Aspergilosis …….steriods.*
- ✓ *Constipation and DIOS ……laxatives and hydration*
- ✓ *Diabetes …….insulin.*
- ✓ *Liver disease …….ursodeoxycholic acid*
- ✓ *Arthritis …….NSAIDS ,prednisolone.*
- ✓ *Cor pulmonale ……heart lung transplantation.(indication for transplant lung in advance lung disease)*

E. *Others :*

- ***Gene Therapy.****: using vectors such as liposomes or replication def. adenovirus.*
- ***genetic counseling if mother plan to concieve.****(check for carrier parents by mouthwash test or vene puncture for detection of mutation)*

What are complications of CF ?

1. ***RESPIRATORY : (cause of death)***
   - *Acute sinisitus and nasal polp.*
   - *Bacterial colonizations and infections – typically staphylococcus , hemophilus , pseudomonas.*
   - *Cor pulmonale in 2nd decade (raised JVP , hepatomegaly and oedema)*
   - *Allergic bronchopulmonary aspergillosis (wheeze , eosinophilia , raised IgE and IgG , + ve culture for aspergillus).*
   - *Asthma*

2. ***GIT / HEPATIC:***
   - *Pancreatic insufficiency- 85% – fat malabsorption (steatorrhea) and FTT.*
   - *Meconium ileus /plug and obstructive jaundice in neonates*
   - *Distal intestinal obstruction syndrome(DIOS) or meconium ileus equivalent.(presenting as abd. Cramps and palpable mass in RIF.*
   - *Rectal prolapsed (toddler presentation) due to steatorrhea and coughing , resolved by pancreatic replacement therapy.*
   - *Chronic liver disease resulting from biliary cirrhosis.*
3. ***ENDOCRINE :***
   - *IDDM (over 10 yrs old) 2ry to pancreatic fibrosis. DKA rare to develop.*
4. ***METABOLIC :***
   - *Hyponatraemic hypochloraemic metabolic alkalosis*
5. ***GENITOURINARY:***
   - *Infertility in male caused by azoospermia due to bilateral absence of vas deferens.*
   - *Subfertility in female.*

what about prognosis of CF ?

a. *40 yrs median survival rate.*
b. *More than 90% mortality due to lung disease. cirrhosis is 2nd life threatening condition.*
c. *Poor prognostic factors :*

- *Female sex*
- *Recurent Haemptosis*
- *Cor- pulmonale*
- *Pneumothorax*
- *Multiple organ involvement.*
- *Poor growth.*

What is common organisms?

- *1st 2year of life ……..staph and haemphalous influnsea*
- *After that ……pseudomonas.*
- *bruckela capcia.*

k/c of Convulsion In Teenager (mb 3.3) (p60)

Case : Fatima was 10 yr old girl who started school at 6 yrs of age . after 6 monthes in school the teacher recognize decline in her school performance . some abnormal posturing was also noticed . in next few monthes parent noted some stiffness of her left side. One day she was brought to the A/E with generalize tonic clonic seizures. Her neurological examination revealed left sided rigidity and dysartheria. Several investigations were done which included EEG , ct brain and IQ assessment . she was started on antiepliptic drug na valporate. Over the course of time she continue to deteriorate . her neurological condition worsened with each yr and eventually become bedridden . the seizures became uncontrolled over time. She has several admission with status epilpticus.

Task : take history from mother , and discuss management with the examiner.

Dd of intractable seizure :

- *Drug : either Poor compliance or In proper dose.*
- *Space occupying lesion e.g diffuse intersic pontine glioma or post. Fossa tumor*
- *Head trauma*
- *Infection (meningitis , encephalitis)*
- *Metabolic and Neuro degenerative disease : late onset metachromatic leukodystrophy (clue in hx. Developmental regression , behavioural change , fhx. , consgunity)*
- *Neurocut. Disease like tuberous sclerosis.*
- *Lennox-gastut syndrome.*
- *Intracranial bleeding .*

- *Wilson disease*
- *Subsclerosing panencephalitis. (SSPE – post measles infections).*
- *Huntington chorea*
- *Acute psychosis.*

Introduction :

Good morning I am dr. mohammed pediatric registrar in this hospital , I believe I talking to mrs nawal mother of Fatima , how do you do ?

A ctually I received REFFERAL letter from GP about fatim's condition , so I will ask you some q. if you don't mind , I will write some notes.

What to ask in convulsion : concentrate on hpi, drug ,birth hx., development , fhx

- *HPI :*
- *description of fits in detail*
    1. *before the event :Establish is it a convulsion?*
    - ***Witnesses** : video record :*
        - ✓ ***When** fits start ?*

- ✓ ***where*** *– at home or school ?*
- ✓ ***what*** *time –morning or night?*

- ***Aura*** *: behavior before event. , also ask the child whether felt , smell or saw unusual things*
- ***Triggers factors*** *: What you are doing before event ?*
  - ✓ *flashing lights , pain , illness , noise , tiredness (late sleep).*

2. *During events :*

- *BY witness Full description of movements and noises?*
  - ✓ *" GTC "Is it twisting movement of whole body or " PARTIAL" local area only ?*
  - ✓ *up rolling of eye ? any video recording of event?*
- ***Consciousness*** *: Eyes open or closed ? any sign of awareness for what happened?*
- *Any unilateral features such as one side involvement / Eye deviation ?*
- ***Duration of event****.?*
- ***Color change*** */Tongue pitting / mouth secretion/ stool+ urine incontinence ?*
- ***How aborted*** *: terminate spontaneously or by splashing water in his face , or with anticonvulsant. Hospital admission needed*

3. *after the event : (post ictal phase)*
   - *Any weakness after that ?*
   - *how long before child back to normal?*
   - *sleep after convulsion ?*

- *Associated symptoms with seizures: looking for other diagnosis , trigor factors*
  Symptoms before convulsion
  - ✓ *Fever : meningitis /encephilitis if fever in detail (when , severity " high/low" , documented or not , respond to antipyretic or not , duration and frequency of attack). Hx of vaccination or infection ?*
  - ✓ *CNS :*
    - *any associated behavioural changes or developmental regression-…….metabolic?*
    - *hx. Of headache "? early morning projectile vomiting ? any concern regarding vision or hearing ?--- increase ICP. (space occupying lesion).*
    - *Hx of loss of consciousness.*
    - *Hx. Of head trauma. Before ?*

- *Anylasis of fits :*
  - *when problem start ? frequency of events ? any associated morbidity*
  - ***in case multiple fits*** *: is it same like before ? same duration or longer ? how frequently/ day ? return to normal between 2 events ?*
  - ***deterioration of school performance*** *?*
  - ***any abnormal posture*** *? : describe this ? gradual or sudden ? difficulty in walking or standing ? frequent falling ? ass with pain in legs or back? Any back trauma*

- *Systemic review :*

- *CVS/RS : thrombosis may be cause of convulsion*
  - ✓ *Any concern regarding heart ? any awareness of heart beat ?*
  - ✓ *difficulty of breathing ? cough ? lower limb swelling ?*
- *GIT :*
  - ✓ *bowel habbits ? tummy pain ? vomiting ?*
- *GU: can give clue to cause also , HUS*
  - ✓ *Any concern regarding urination?*
  - ✓ *amount of urine ? colour ? pain during passing urine ? frequency ? she control her urine ?*
- *Mss : neurocutaneous syndrome , brusis*
  - ✓ *abnormal walking ?*
  - ✓ *any skin rash ?*
  - ✓ *any skin changes " café-au-lait"?*
  - ✓ *joint pain or swelling ? contractures ?*
- *Pubertal hx. : any signs of puberty ?*

- *PMH : k/c of convulsion :*

- *HX. Of fits before ? is it febrile or not ?*
  - ✓ *when ?*
  - ✓ *how present ?*
  - ✓ *who diagnose ?*
  - ✓ *need admission or not ?*
  - ✓ *f/up with whom ? dietien , gene doctor*
- *hx. Of head trauma ? any bed sores*
- *hx. Of hospilization ?*
- *hx. Of surgical operation*

- *Drug hx.: k/c convulsion*
  - *on which treatment now ? how much dose ? frequently ? route ?*
  - *compliance e drugs ? who give the treatment ? any recent change in drug or dose change? Develop any unwanted effects from the drugs ? did you missed any dose ?*
  - *any drug allergy ?*

- *Birth H_X.:*

- *any concern during pregnancy of him ?*
- *mode of delivery ? instrument delivery ? birth injury/trauma ?*
- *Fit during neonatal period ? admission in nicu?*

- *Vaccine :*
  - *immunized uptodate ?*
  - *any missing vaccine – like measles? Any extravaccine ?*

- *Developmental H_X :*
  - *any concern regarding his development ? is he develop like his peers ?*
  - *any deterioration in his developmental skills ?*
  - *she is completely bedridden ? can't sit or stand or walk?*

- *Family H_X :*

- ✓ *similar condition ?*
- ✓ *neonatal death ?*
- ✓ *relation of father and mother " metabolic cause" ?*
- ✓ *how many sibling ? well ?*

Social hx :

- *Impact on pt.:*
  - ✓ *Affection of it in Schooling: absence , performance , bulling , relation e his peers , new school ? activity ?*
- *Impact on family :*
  - ✓ *parent work ? living together ? any financial burden? Any support ? health insurance?*

Discussion

What is epilepsy ?

- *Is clinical manifestation of frequent abnormal electrical brain discharge unrelated to fever or acute insult , lead to disturb behavior , conscious ,sensation perception and motor function.*

what are types of convulsion?

1. *Generalize :*
   - ✓ *Absence seizure : typical , atypical.*
   - ✓ *Myoclonic : juvenile myoclonic , infantile spasm.*
   - ✓ *tonic - colonic .*
   - ✓ *tonic .*
   - ✓ *atonic .*
   - ✓ *colonic .*
   - ✓ *rolandic eplipsy .*
2. *Partial :*
   - ✓ *Simple : without loss of consciousness : motor , sensory , autonomic , psychic.*
   - ✓ *Complex paritial : with loss of consciousness : simple partial extended ,*
   - ✓ *Partial with secondary generalization.*
3. *Non convulsive epilepsy : present with status epilepticus.*

What investigations for epilepsy ?

- *Blood for :*
  - ✓ *glucose , electrolytes , s.ca , s.mg . cbc , rft , lft.*
  - ✓ *metabolic screen , congenital infection screen (if neonatal screen).*
- *E.E.G .:*
  - ✓ *EEG after 2nd attack.*
  - ✓ *EEG emergency (within 2-4 weeks of attack)will be after .*
- *Neuroimaging :*
  - ✓ *USS (infant with patent fontanel)*
  - ✓ *Skull x-ray (intracranial calcification , trauma)*

- ✓ *M.R.I. (if less than 2yrs , not respond to 1st line ttt , and focal fits)*
- ✓ *CT scan .(if trauma , acute situation if unwell , if MRI not available)*

- *LP : in unwell , febrile child if less than 18 month.*
- *drug level*

  Indication of drug level:
  - *to Adjust the dose.*
  - *To r/o non compliance.*
  - *Suspicion of toxicity.*
  - *Organ failure .*
  - *If admission in PICU.*

  Indication of investigation in ist convulsion: young than 1 year ,unwell child , abnormal finding in examination.

Management of epilepsy : MDT (community pediatrician , epilepsy nurse specialist , school nurse and teacher ,parents , psychologist)

- *Life style modification (adequate sleeping , healthy diet /avoid alchol , regular excesice , avoid certain Contraceptive , avoid trigger) .*
- *Advice and action plan for the pt.:*
  - ✓ *Effect on driving and driving lincense : apply if free for 1yr , and night time if free for 3years.*
  - ✓ *Shower safer than path and use a sign rather than locking the door.*
  - ✓ *Sport : To avoid some contact sport , some sport with precauation like wearing helmet in cycling , swimming undersupervision,*
  - ✓ *Effect on jobs : like avoid army*

- *Genitist to r/o neurodegenerative disease.*
- *Neurosurgeon and oncologist if brain tumor.*
- *Dietien , physiotherapy , social , and community nurse., occupational therapy.*
- *Neurodegenerative is supportive disease.*
- *Brain tumor surgery , radio and chemotherapy.*
- ***REFERR TO NEUROLOGIST** for prescribing anticonvulsant drugs and f/up :*

Drug	*Mode of action*	*Use*	*Side effects*
Sodium valoprate			
Carbamazepine			
lamotrigine			

- ✓ *Antieplitic can be given form 1st attack in :*
  - ☒ *Neurological deficit e.g CP.*
  - ☒ *If parent request.*
  - ☒ *Abnormal CT SCAN.*
  - ☒ *If EEG changes.*

Management of status eplipticus :

- *stabilize the child (Airway , Breathing , Circulation ,Drug ,E) .*
- *Stablish iv acess :*
- *Rectal Diazepam / iv lorzepam 0.1 mg/kg (for 3 doses.).*
- *Phentoin : bolus (20mg/kg) , refractory (10mg/kg), maintaince. (2.5 mg/kg/dose bid)*
- *Phenobaripton.*
- *MV And thiopental 1mg /kg.*

Common types of epilepsy :

1. *Absence seizures (exam case) :*
   - ✓ *No postictal phase , last in 30 sec.*
   - ✓ *Typical EEG : 3/s generalized spike and wave.*
   - ✓ *Treatment : ethosuximide , na-valoprate ,lamotrigine*
2. *Generalized tonic – clonic seizures:*
   - ✓ *Idiopathic , induce by infection , stress , drug*
   - ✓ *Phases :*
     - o *Tonic phase*
     - o *Clonic phase*
     - o *Postictal phase*
   - ✓ *Treatment : sodium valoprate*
3.

Epilepsy syndromes :

1. *Infantile spasm : (exam case)*
2. *Juvenile myocolonic epilepsy :*
3. *Benign rolandic epilepsy*

Analysis of MSS symptoms

1. ***in detail joint symptoms :***
   - ***ask about features to diagnose arthritis (pain , tenderness , swelling , hotness):***
     - ✓ ***how present ?***
     - ✓ ***ass e pain on the move by himself (active move)? Or when someone else move it for you (passive move)?, or***
     - ✓ ***any ass swelling ? , limitation of movement ? ,***
     - ✓ ***or change in color of skin over joint affected ?***
     - ✓ ***are you feel any hotness over joint ?***
   - ***since when started ? Any preceded illness like loose motion, sore throat?***
   - ***how many joint affected ? which joint affected ? sequence of joint involvement ?***
   - ***at which time of day it is more ? is it waken him from sleep? How is pt when getting in the morning?***
   - ***How started is it sudden or gradual ?***
   - ***Anything aggravating ? anything relieving ?***
2. ***Level of functioning e daily activity :***
   - ***is it affect of daily function / activity? any Limitation of sporting and social activities ?***
   - ***any Pain on mastication or eating , dressing , writing , walking ?***
   - ***any aids required ? any home modification needed ?***
   - ***is he able to attend school ?***
3. ***Is he develop any skin spots? If present tell me about site? describe it for me ? disappear or not during pain or fever?***
   (either in whole body at time fever "salmon patch of jia" , or on the face " SLE" or above eye lids " helitrope in dermatomyocytis")
4. ***any skin swelling " rheumatoid nodules" ? any swelling in the neck ?***

Recurrent Headache

∆.∆. :- of recurrent and chronic headache

1. *Functional H^O.(COMMONEST) : psychogenic , reduce the consumption of painkiller.*
2. *Migraine :*
    - *Common migraines (e out aura): more common.*
        - ✓ *common on school age .*
        - ✓ *not preceded by aura but feel ill or fatigue before onset.*
        - ✓ *Throbbing and poorly localized*
        - ✓ *Nausea , vomiting , pallor , photophobia are common.*
    - *Classic migraine (e aura)*
        - ✓ *+ve FHx.*
        - ✓ *unilateral throbbing , trigger by exercise. , relief by rest.*
        - ✓ *precede by aura (blurred vision , scotomas , flashing light , zigzag lines , hemianopia).*
        - ✓ *Nausea , vomiting , pallor .*
        - ✓ *Sensitivity to light" photophobia ", movement and noise.*
        - ✓ *Transient neurological disturbance (numbness ,tingling , hemiparesis , aphasia)*
    - *Complicated migraine : (basilar artery , opthalmoplegic , hemiplegic)*
    - *Migraine equivalent :acute confusional state , cyclic vomiting ,benign paroxysmal vertigo.*
3. *Tension H^O:*
    - *Constant squeezing pain located as band around the head*
    - *may be triggered by stress , fatigue or hunger , psychosocial factors.*
    - *No nausea , vomiting ,or abdominal pain. No fhx of migraine.*
4. *Cluster headache :*
    - *rapid onset , pain localized to the eyes and temporal region*
    - *accompanied by lacrimation , rhinorrhea , sweating and nasal congestion.*
    - *Pain last 30 -90 min and repeat several times each day , clustered over weeks-months.*
    - *Affected pt tends to walk around in an agitated state*
5. *Meningitis :*
    - *fever + meningeal signs (nuchal rigidity , kernig and brudzinski signs)*
6. *vascular : High B.P. , subarachnoid haemorrhge , AV malformation*
7. *increase intracranial pressure :*
    - *Pseudo tumor cerebri or benign intracranial HTN. : constant or intermittent headache , papilledema , vision disturbance , obese , CSF normal , LP is treatment.*
    - *I.C. Tumors.*
    - *Hydrocephalus*
    - *Subdural haematoma.*
8. *Post traumatic (post concussive syndrome)*
9. *Medication overuse*
10. *Reffered pain : Sinusitis headache. , optic neuritis , otitis media*
11. *Others : food additives ,caffeine withdrawn headache , eye strain, refractive error.*

What is red flag feature of headache ?history wise

- *Woken from sleep.*
- *Morning/recumbent(lying down) headache.*

- *Occipital headache*
- *Headache worsened by coughing or straining at stool or position change.*
- *Increasing in severity and frequency of headache.*
- *New onset of lethargy.*
- *Change in behavior / school performance.*

Sinister "evil-red flag " clinical features : examination wise

- *Meningeal signs*
- *Altered conscious level*
- *Papilloedema*
- *Hypertension*
- *Lateral rectus palsy."6th nerve palsy".*

Introduction : hello I am dr . mohammed abdalla pediatric registrar , I believe you are mrs ….nice to meet you , I am here today to take some notes on ……condition , as GP letter that john having headache for long time , I want to know more about this headache.

WHAT TO ASK IN HEADACHE:

- *HPI : SOCR DATE*
  - *Site (occipital , unilateral or bilateral , frontotemporal)*
  - *Severity (affect normal function or school)*
    - ✓ *is it awake him from sleep .*
    - ✓ *Is headache Increasing, decreasing or static in severity and frequency since start.?*
  - *Onset (when started) , sudden or gradual ?*
  - *Character (throbbing , squeezing like a band " stress headache" ,stabing) ? /nature (episodic or continous)*
  - *Radiation .*
  - *Duration (minutes , hours , days).*
  - *Frequency(per week , month , year) ?*
  - *Time (early morning /during sleeping / School time).*
  - *Excerbating Factors :*
    - ✓ *cough-straining – pending forward - light. related to exercise*
    - ✓ *Is it related to any especial type of food (4 types of food : caffeine , citrus , cheese , chocolate " food contain tyramine aggravate migraine"),or*
    - ✓ *Relieving factors : is it relieve by anaglisia*
  - *aura / attack prescribition :*
    - ✓ *What is the child appearance and behavior during episode.? e.g palor*
    - ✓ *Aura before headache did you feel anything before attack like*
  - *Associated Symptoms :*
    - ✓ *GIT :*
      - *N/ vomiting : projectile or not ? ……tumor.*
      - *abdominal pain"migraine" .*
      - *what about bowel habits " constipation".? what about appetite ?*
    - ✓ *CNS :*
      - *any loss of consciousness? Or convulsion ?*

- *Any weakness in one side of the body ?*
- *Any concern regarding vision , or hearing during attack or even before attack ?*
- *Any hx. Of head trauma?*
- *change of behavior and School Performance?*

✓ *General : red flag signs*

- *is it ass e fever ? night sweat ?*
- *new onset fatigability ?*
- *Growth : any concern regarding growth ?*
  - *is it affect his growth" ass with weight loss"- tumor?*
  - *he is overweight " pseudo tumor cerebri "?*

✓ *RS/ENT :*

- *cough /SOB ?*
- *ear pain or infection , teeth ache.?.....refered pain.*

❖ *Systemic review :*

- *MSS : any skin spots? Or joint pain or swelling ? Facial pain "forehead and cheeck"*
- *CVS : any increase in heart beat? Or change in colour of lips? Or episodes of fainting attack ?*
- *Renal : any concern regarding urination? Amount of urine ? color of urine , frequency , loin pain , eye puffiness and oedema ?*

❖ *PAST HX:*

- *Any hx of any medical problem ??*
- *Hx of hospitalization ?*
- *Hx of surgery ? or blood transfusion ?*

❖ *DRUG HX: important b/c chronic use of drug can cause rebound headache.*

- *Current medication or chronic medication ?*
- *Any allergy to any drugs ?*

❖ *NEANATAL HX: any concern regarding his perinatal period ?*

❖ *Dietary hx : what type of food ? any allergy to any type of food ?*

❖ *VACCINATION HX: is he vaccinated up to date ?*

❖ *DEVELOPMENTAL HX. : any concern regarding his development ?*

❖ *Family H_X :*

- *Of similar condition ? of Migraine ?*
- *Is your husband is your relative ? what degree ?*
- *How many children you have ?*

❖ *Social H_X : look for stress excrbating for migriane*

- *Impact of the disease on child :*
  - ✓ *any Stress at school – exams , new school , bulling ?*
  - ✓ *& absence ? relation with his peers ?*
  - ✓ *any new stressful event in his life " divorce of parent , loss one in the family or friends".*
- *Family Impaction : any stress at home ?*
- *Personal : what is the job of parents ? educational level ? are you live with your husband*
- *Economic : are you happy about your income ? any financial support ?*
- *Environment : any one smoke at home ? housing ? animals ?*

Discussion : migraine headache

How diagnosed migraines clinically ?

Migraine without aura is identified by at least 5 attacks fulfilling the following criteria:

- *Duration between 1 and 48 hours*
- *At least 2 of the following: (1) unilateral or bilateral, (2) pulsating, (3) moderate to severe in intensity, (4) aggravation by, or causing avoidance of, routine physical activity*
- *During the headache, at least 1 of the following must be present: (1) nausea or vomiting, (2) photophobia or phonophobia*

In addition, the headache should not be attributed to any other cause.

- *What is aura ? aura should be between 5-60 mint.*
- *If aura less than 5 mints indicate what ?*
- *If more than 60 mints indicate what ?*

What are complicated migraines ?

- *Basilar artery migraines : intense occipital headache +/- ataxia , N , V , and visual changes.*
- *Opthalmoplegic migraines : headache accompanied cranial nerve palsy 3rd*
- *Hemiplegic migraines : unilateral motor and sensory symptoms.*

Management :

- *Clinical examination INCLUDING : thorough ENT examination including dentition.*
- *Checking VS : BP , PR. , HC to r/o ICP.*
- *Visual fields and fundscopy*

Investigation :

- *CBC , PT , PTT in case of head trauma.*
- *RFT*
- *Urine anylasis (nephritic or nephortic syndrome)*
- *LP :*
  - ✓ *elevated opening pressure " pseudo tumor cerebri " .*
  - ✓ *in meningitis and subarachnoid hemorrhage.*
- *EEG : in pt e seizure or to r/o seizure in case of acute confusional state.*
- *Imaging : x-ray of sinus , CT to look for evidence of bleeding , MRI of head for tumor.*
  - ✓ *indicated (when no fhx of migraine , red flag feature)*
  - ✓ *to detect vascular malformation , posterior fossa lesion*

Management Migraine and tension type of headache:

1. *non- pharmacological treatment :*
   - ✓ *Reassurance.*
   - ✓ *Relive the ↑ Factors e.g: poor sleep , tension at home , bullying .*
   - ✓ *Change Life Style and dietary advice.(HEADACHE HYGIENE) , avoid 4cs "caffeine , citrus , chocolate , cheese" , And nitrates ,monosodium glutamate , sleep habbits and exercise.*
   - ✓ *Headache and food diary to try to capture exacerbating factors.*

2. *Pharmacological :*
   - ✓ *Abortive :*
     - *Triptans " selective agonist for serotonin 5 HT-1 receptor" in 2forms nasal spray and oral (sumatriptan)*
     - *analgesic (Adol / naproxen /ibuprofen – the best NASID).*
     - *Isometheptene and*
     - *Ergotamines : not used in children b/c causing severe vasoconstriction.*
     -
   - ✓ *Prophylaxis : in case of 4attacks/month for 2 month.*
     - *B-blocker –(Propanolol)*
     - *Tricyclic anti depressant.- amitriptyline , nortriptyline*
     - *Ca- channel blocker.: verapamil/ flunarizine – best prophalaxis).*
     - *Anticonvulsant : valporic acid , topiramate.*
     - *PIZOTIFEN : serotonin 5 HT-2a and 5HT- 2c recptor antagnosit . SE – weight gain and drowsiness.*
   - ✓ *Others :*
     - *Antiemetic : metaclopromide in nausea*

JIA

Scenior : REHUMATOLOGY

- *faisal is 9 years boy reffered from ABHA GH seen by GP because of RT. knee pain for 6weeks then shifted to LT. ankle for 2 weeks.*
- *CBC , electrolytes , CRP , ESR , urine anylasis all are normal.*
- *Start some treatment but not showed improvement .*
- *Wt is going down centile from 50th to 25th*

Task :Take full Hx and discus plan of management.

What is dd?

- *JIA (most likely).*
- *Rheumatic fever*
- *Juvenile psoriatic arthritis.*
- *Haematologic problems : sickle cell arthritis*
- *Haemoarthrosis (Hemophilic arthritis.)*
- *Tumor : Leukaemia – ALL.*
- *Trauma.*
- *Acute septic arthritis.*

- *Infection "EBV"., brucolosis*
- *Systemic rheumatic diseases : such as SLE./connective tissue disease., dermatomyositis , vasculitis (including HSP and kawaski disease).*
- *Reactive arthritis*
- *Reiters syndrome (conjunctivitis ,sterile urtheritis , arthritis)*

What to ask in JIA?

General Principle:-

1. Introduce Yourself (Hello I'm Dr.mohammed a Registrar in Pediatric working in this Hospital)

2. Check for Pt &Mother (I believe that you are Mrs. …… the Mother of fasial)

3. Welcoming (Thank you for coming to discus faisal condition)

HPI and systemic review :

- *MSS :*
  5. *in detail joint symptoms :*
     - *ask about features to diagnose arthritis (pain , tenderness , swelling , limitation of movement , color , hotness):*
       - ✓ *how present ?*
       - ✓ *ass e pain when move it by yourself , Or by someone else (active and passive movement)?, or*

- ✓ *any ass swelling ? , limitation of movement ? ,*
- ✓ *or change in color of skin over joint affected ?*
- ✓ *are you feel any hotness over joint ?*

- *since when started? How started is it sudden or gradual ?*
- *how many joint affected ? which joint affected ? sequence of joint involvement ?*
- *at which time of day pain is more ? is it waken him from sleep? How is pt when getting in the morning?*
- *Anything aggravating ? anything relieving ?*

6. *Level of functioning e daily activity :*
   - *is it affect of daily function / activity? any Limitation of sporting and social activities ?*
   - *any Pain on mastication or eating , dressing , writing , walking,toileting , pathing ?*
   - *any aids required ? any home modification needed ?*
   - *is he able to attend school ?*
7. *Is he develop any skin spots? If present tell me about site? describe it for me ? disappear or not during pain or fever?*
   (either in whole body at time fever "salmon patch of jia" , or on the face " SLE" or above eye lids " helitrope in dermatomyocytis")
8. *any skin swelling " rheumatoid nodules" ?*
   - *any swelling in the neck ?*
   - *any changes on the nail. ?(psoiartic arthritis).*
9. *Others :*
   - *Any preceded illness like loose motion, sore throat.*
   - *Hx. Of trauma .*
   - *Hx. Of anaemia*
   - *Hx. Of transfusion*
   - *Any contact with animals ? drinking of raw milk …… brucellosis.*

- *HAEMATOLOGY : Does he bleed from any sites of his body (haemophlia)?*
  - *If yes what action done and treatment given? Does he had anaemia before?*
- *Eye symptoms : any concern regarding vision ? any redness of eyes ?.....JIA./kawaski.*
- *General : is it ass e fever ? is it affect sleep pattern ?is it ass e weight loss?*
- *Growth hx and nutritional hx.:*
  - *Is it significant weight loss ? requirement for growth hormone ?*
  - *Have you chart for his growth?*
  - *Any dietien involved?*
  - *what type of food ? how many meal/day? any difficult of feeding?*
  - *Way of taking feed – through NG tube /gastrostomy?*
  - *Any allergy to any food?*
- *Respiratory /ENT : any chest pain "pleuritis / pericarditis "…..JIA.? any cough ? difficult of breathing ? musical sounds? Does he had been subjected to frequent attacks of infection in his throat?*

- *GIT symptoms :*

- *any concern about bowel habbits ? …… loose motion e IBD.*
- *what about appetite ? vomiting ? nausea ? abd. Pain ?*

- *CNS : any abnormal movement or drowsiness ? any headache ? any behavioral change ?*
- *Urinary system:(SLE / SE of drugs) any concern regarding urination? What is the color of urine ? is she feel burining micturation? ……. HSP/SLE.*
- *CVS : any increase in heart rate?*

PAST HX.: if known case of JIA.

- *when , where , by whom?*
- *how is Present? Sequence of joint involvement ?*
- *Any preceded illness like loose motion, sore throat?*
- *initial investigation?*
- *Need hospitalization? To ICU or to the ward ?*
- *What treatment given?*
- *Number of hospitalization ?*
- *Development of complications and their management?*
- *Team of f/up and their plan ?*

- *Any surgical intervention?*
- *Does he subjected to trauma?*
- *Does he had any medical problem in the past? Any history of aneamia?*
- *Does he received any Blood before to any cause (when and why ?)*

DRUG HX.:

- *What is current medications? And past ones? Including physiotherapy and drugs , occupational therapy ?*
- *Drugs : SE , monitoring of level , compliance , using of any bracelets?*
- *Any allergy to any drug?*

NEONATAL HX.:

- *any concern regarding perinatal /natal / postnatal ?*
- *congital SLE : may be mother having skin rash "SLE", OR baby having heart problem after birth.*
- *If yes go in details (may be bleeding disorder or other during neonatal period)*

VACCNATION HX.: is he received vaccine up to date? Any extravaccine ?

DEVELOPMENTAL HX.: any concern regard his development in compare with his peers?

FAMILY HX.:

- *Of similar condition?*
- *Any hx of anaemia and blood transfusion? Any hx of bleeding disorder?*

- *Of arthritis , condition affect defence mechanism of the body " immune def." ? IBD , psoriasis , uveitis . SLE*
- *You and your husband relative ?*
- *How many children you have? Are they well ?*

SOCIAL HX.:

- *Personal : education of parents ? whose taking care of pt?*
  stable life – they live together ?
- *Impaction of illness on pt.: in detail*
  - *Impaction of the disease on school:*
    - ✓ *any school absent due to this illness? And why missed ? (may be b/c school in 2nd floor and no lift.)*
    - ✓ *is he able to do his school activity?*
    - ✓ *Transport to school : How is he transport to school? need wheelchair for long distance ? Is he require any assistance?*
    - ✓ *School performance : What about school performance?*
  - *psychological effect on pt.:*
    - ✓ *Is he depress b/c bed ridden for long time?*
    - ✓ *Effect of daily activity ?*
    - ✓ *Is he bullied at school ?*
    - ✓ *Only few friends b/c missed school.?*

- *Impaction of illness on family life :*
  - *Need help in dressing , toileting , and bathing at home and school ? If no who help him? They did for him regular physiotherapy or not?*
  - *Any Extra financial burden on family ? and why ? family may need home modification , splints , wheel chairs , transport , frequent hospitalization , drugs .*
  - *Is he play with other sibling? Sibling not getting enough time/ attention.*

- *Economic :*
  - *job of parents ? are you happy about your income ?*
  - *any financial help to family ?*
  - *on any social help? Social worker involved?*
  - *they have a car? . pt need transport to and from school. How can Transporting Pt for his F/UP?*

- *Environment : smoking ? housing ? animals*

- *WHAT IS YOUR BIGGEST WORRY ?*
- *Summarize history .*
- *What is DD ? and what is most diagnosis ?*

discussion

What is the JIA ?

it is chronic arthritis for minimum of 3month/6weeks , in one or more joints , before the age of 16 years (peak 1-5yrs) , and after exclusion of other causes.

What Criteria for classification ?

1. *Age < 16yr.*
2. *Duration ≥ 6 weeks./3 month/6month*
3. *Arthritis define as :*

- *Joint Swelling/effusion . <u>OR</u> Presence of 2 or more of the following : (↓movement /Tenderness/Hotness/Painful move)*
- *N.B: Artherlagia means painfull joint.*

10. *no. of joint involved*
11. *systemic features.*
12. *presence of RF.*
13. *ENTHISTIS.*

TYPES OF JIA ?

1. *poly articular : 5 or more joint ,2 types:*
   - *RF –ve*
   - *RF + ve.*
2. *oligoarticulal : 4 or less., 2types :*
   - *Persistant oligo : 4 joints involve from the start.*
   - *Extended oligo : 2 joint involve and then after 6 month involve more than 4 joint.*
3. *systemic disease : arthritis with intermittent fever.*
4. *enthesitis related arthritis (ERA).*
5. *juvenile psoriatic arthritis (PSA).*

What investigation?

1. *Eye examination*
2. *BLOOD TESTS:*
   - ✓ *Haematology :*
     - ❖ *CBC and bleeding profile*
       - *anaemia , thrombocytosis , leucocytosis "systemic ".*
       - *to r/o haematological disease.*
     - ❖ *ESR/CRP : ESR elevated. For monitoring activity of the disease.*
     - ❖ *ASOT to r/o rheumatic fever.*
     - ❖ *Blood c/s to r/o oesteomylitis.*
   - ✓ *Renal function test .*
   - ✓ *Serology :*

- ❖ *Rheumatoid factor (IgM) higher level carry worse prognosis , and help in classification.*
- ❖ *Anti-nuclear antibody "ANA" : help in classification of JIA.*
- ❖ *Ds DNA for SLE*

✓ *Immunology : C3 , C4 rise as a part of inflammatory response.*

✓ *HLA typing :*

- ❖ *B27 ….psoriatic arthritis*
- ❖ *DR4 …..RF +ve polyartheritis.*

3. *Urine analysis : for hematocrit , proteinuria.*
4. *Imaging :*

- *X-RAY of joint : narrow joint space ., soft tissue swelling., peri articular osteoporosis , joint erosion , leg length discrepancy.*
- *X-RAY of chest for complication (cardiomegaly , effusion).*
- *Orthopantomogram(OPG) screen for tempromandibular joint involvement.*
- *US for joint : look for joint effusion , synovitis , guiding for intra articular therapy.*
- *US for abdomen : for hepatosplenomegally.*
- *MRI for : assess early joint damage , +ve effect of treatment before they clinically apparent., amount of inflamed synovium.*

What is your treatment plan?

Multidisciplinary team committe: (to help pt to return school and normal function activity.) involved :

- *Pediatrition.*
- *Physiotherapist .:*
- *Occupational therapist*
- *Social worker.*
- *Orthopedic surgeon./ foot and hand specialist.*
- *Ophthalmologist*
- *Psychologist*
- *Dietien.*
- *Others : parents , GP , school nurse , head teacher.*

1. *Non DRUG ttt (by physiotherapy and occupational therapy to prevent joint deformity and maintain function)*

- *Hydrotherapy .*
- *Splints.*
- *Active gentle exercises.*
- *passive movement.*

2. *Drug treatment:*

- *NSAIDS (Ibuprofen , naproxen , indomethacin). (S/E anorexia , abd. Pain , bruising , pseudoporphyria). COX 2 inhibitor.*
- *Intra articular steroid - Local : (triamcinolone). Useful in oligoarticular.*

- *Systemic steroid – (oral/iv prednsolone. 30 mg/kg) : for severe uveitis , systemic disease ,immobility , severe polyartheritis , pericarditis.*
- *Disease modifying drugs :(immunsuppresants) reduce joint erosion and deformity.*
  - ***Methotrexate :***
    - *effective in seronegative polyartheritis , psoriasis.*
    - *Dose 10 – 20 mg / m2 surface area once/week.*
    - *SE: loss of appetite , nausea , oral ulcer(treated by folate) , raised liver enzymes, a granulocytosis. , lung fibrosis.*
  - ***Cyclosporine**: s/e gum hypertrophy. , steven jonhson syndrome.*
  - ***Sulfasalazine** :(5 aminosalicylate)*
    - *useful in enthesitis related arthritis.*
    - *SE : Hepatotoxicty , bone marrow alteration.*

- *New therapies :*
  - *Immunomodulator :anti – TNF alfa (Infliximab , etanercept) : causing immunosuppresion.*
  - *Autologous stem cell transplantation.*
  - *IL1 , IL6 inhibitor ?*

What are complications of JIA:

- *Chronic uvitis : which treated by regular slit lamp f/up by ophathalmologist , steroid eye drops .*
- *discrepancy increase : affected limb is taller due to increase blood flow towards affected joint.*

How montoring disease activity ?

- *Clinical disease*
- *Degree of anaemia.*
- *ESR*
- *MRI/X-RAY showing disease activity.*

What about prognosis of the disease ?

- *Remission in 60 -85% .by 6 month.*
- *1/3 Destructive polyartheritis.*
- *1/3 having active disease as adult.*
- *Depression*
- *Death.*
- *RF +ve disease have worst prognosis.*

What are drugs not used in JIA.:

- *Aspirin*
- *Pencillamine*

- *Gold*
- *Anti malarials.*

What is goals of JIA management :

i. *Switch off inflammation : to prevent permanent joint damage .*
ii. *Provide analgesia and treat stiffness.: analgesic (NSAID), ice packs , warm path.*
iii. *Maintain joint function :*
    - *Physiotherapy (including hydrotherapy)*
    - *Attention to footwear*
    - *Occupational therapy assistance for those with upper limb involvement.*
iv. *Prevent deformities : splinting , cervical colar , surgical intervention*
v. *Treat complications :*
    - *Eye involvement : uvitis , cataract and glaucoma .*
    - *infection*
vi. *Ensure optimal nutrition: b/c nutrition may be affected*
vii. *Rehabilitation :*
    - *occupational therapy : at school (use adaptive pencil holder , decreasing inter class distances , avoiding stairs , use of laptops in place of writing) , at home (use of computer ,)*
    - *physiotherapy : active/passive excercise*
    - *family support : social worker , parent support groups , child disability allowances*
viii. *Ensure optimal psychosocial health*
ix. *Educate parents and pt. regarding disease.*

See Survival guide page 273

Name	*Frequency*	*Onset*	*Test*	*Eye involvement (uveitis)*
Systemic	*10 – 20 %*	*< 5yrs*	*RF / ANA (- ve).*	*NIL*
Oligoarticular (persistent) < 4 joint	*40 – 50%*	*2-5 years*	*ANA (+ve)*	*Yes . regular slit lamp.*
Oligoarticular (extended) > 5 joint	*5 – 10 %*	*2- 5 years*	*RF –ve*	*Yes.*
Polyarticular (RF –ve)	*15 – 20 %*	*Childhood*	*RF (-ve).* *ANA (+ve) 25%*	*rare*
Polyarticular (RF +ve)	*5 – 10 %*	*Late childhood*	*RF (+ ve).* *ANA (+ ve) 50-70%.*	*rare*
Psoriatic	*8-10%*	*childhood*	*RF(-ve)/ANA (+ve)*	*potential*

<u>Types of JIA :</u>

1. *<u>Systemic J.I.A. :</u>*

<u>Clinical Features:-</u>

1/ systemic symptoms:

- *Fever (> 38.5^{O}C.) for at least 6 weeks.*
- *Skin Rash (salmon-pink):*
  macular , non - pruritic with fever or heat and fades if temp is normal.

2/Polyarticular A.

3/Others:

- *Wt loss /Anorexia .*
- *Lymphadenopathy / hepato-splenomegaly .*
- *Anaemia/ ↑W.B.C. & PLT .*
- *RF and ANA are (-ve).*
- *No uveitis /sacroilitis*
- *Myalgia /artheralgia*

D/D:

- *Malignancy*
- *SLE*
- *Kawasaki disease*
- *Rheumatic fever*
- *Infection /sepsis (TB , malaria ,endocarditis)*
- *Reactive arthritis*

2. *Oligo Articular A.*

Clinical Features:-

1/Age2---5Yr. Girls (80%) .

2/Large Joints (Knee / Ankle / Wrist)

3/ Joints : NO ≤ 4 / Swelling without pain / Hot / Tenderness without erythema.

4/Ch. Uveitis (by Slit Lamp): ANA +Ve / 30%.

5/ Leg Length discrepancy (affected limb is longer)

Prognosis:-

***Most resolved (by 6 month)*

***20% Relapse .*

***20% → Extended Oligo J.I.A. (Type 2 oligoartheritis.)*

3. *Poly Articular : 2types*
   a. *Rh. F. - Ve.*

- *20 – 25% of JIA.*
- *Symmetrical Artheritis (large &small) NO Sacro-iliitis.*
- *T.Mandibular joint affected…….lead to limited mouth opening.*
- *Uveitis Rare.*
- *RF –ve /ANA +ve in 25%.*
- *10—15% erosive Artheritis.*

b. *Rh F. +Ve.*

- *5-10% of JIA./80% Girls*
- *Affecting upper and lower limbs.(hands and feet).*
- *Rh.F +Ve 100% / ANA +Ve 75% /HLADR4 (aggressive course).*
- *NO uveitis , sacroiliitis rare.*
- *Poor prognosis : 50% erosive A. + Joint destruction + contraction.*

4. *Enthesitis – related arthritis : refered to inflammation of tendon insertions e.g: Achilles tendon and planter fascia.*

- *10-15% of JIA.*
- *90% boys*
- *Few large joint involved esp. hip girdle ,spine, sacroilitis is common.*
- *Acute uveivitis 10 – 20% of cases.*
- *ANA , RF …(-ve).*
- *HLA B27 +ve in 75% .*
- *Many develop ankylosing spondylitis.*

PSOIRIATIC ARTHERITIS :

Criteria for Diagnosis:- Vancouver criteria for diagnosis.

Confirmed Case:

1. *Artheritis + Typical Psoriatic Rash.*
2. *Artheritis + 3 of the following:*

- *Dactylitis*
- *Nail Pitting or onychlyses*
- *Psoriatic-like Rash*
- *Family H_X*

Probable Case :

Artheritis + 2 of the above criteria

Management :

- *Like J.I.A.*
- *Surgery (hip & other)*

Nephrotic Syndrome

CASE : ahmed is 8yrs old reffered by his GP , as he develop for 4 days mild puffy eyelids and 2+ protein in his urine . he had nephrotic syndrome diagnosed 2yrs ago treated with prednisolone.

Dd : puffieness / swelling as general :

- *Allergy*
- *Nephrotic*
- *Nephritis*
- *Hypoalbumnemia*
- *Liver disease*
- *Congestive heart failure.*

Dd of puffieness in k/c of nephrotic :

- *Relpse*
- *Steroid resistant*
- *Steroid dependant*

Problems face the Pt. e nephrotic syndrome :-

1. *Hypo-volaemia :- (Abd. Pain / ↓↓ Urine Output / Shock)*
2. *Infection :- (due to urinary loss of immunoglobulin & Complement / Steroid ttt) → Pt should take prophylactic penicillin + Pneumococcal & Influenza Vacc.*
3. *Chicken-pox & Measles (Steroid) Pt. Should be ttt by Acyclovir avoid Vacc.*
4. *Thrombosis (due to ↑ Viscosity of blood + loss of Antithrombin-3)*
5. *Steroid side effect*

What to ask in nephortic

1. *HPI:*
    - *Puffieness of face :*
        - ✓ *is the swelling for whole the face or specifically around eyes?*
        - ✓ *Any other part of the body swelling ?*
        - ✓ *Is it painful?*
        - ✓ *Is it gradually or sudden ?*
        - ✓ *You notice any variation in swelling during the day?*
        - ✓ *Is he complain of any allergic condition? Any ass itching?*
        - ✓ *Anything make it better ? or make it worse?*
    - *When parents first concerned this might be relapse? What about protein in urine?*
    - *urinary symptoms : any concern regarding his urine ?*
        - ✓ *amount of urine ?*
        - ✓ *frequency of the urine ?*
        - ✓ *color of the urine ?*
        - ✓ *is he feel burning sensation when passed urine?*
        - ✓ *odor of the urine ?*

- *GIT symptoms :*
  - ✓ *abdominal pain : is it severe ? where exactly the site ? is it radiate any where ? anything make worse ? or make it better ? is it related to food?*
  - ✓ *is it ass with vomiting ? how many times / day? Color of vomiting ?*
  - ✓ *What about bowel habbits?*
  - ✓ *What about appetite?*
  - ✓ *Is it ass with increase in tummy size?*

2. *Systemic review :*
   - *RS : any cough? Difficult of breathing ? or chest pain?*
   - *CVS: any increase in heart beat?*
   - *CNS:*
     - ✓ *any alteration in conscious level ? any headache ? or abnormal movement?*
     - ✓ *Any concern regarding his vision ? or hearing ? (alport syndrome.)*
   - *MSS: any skin spots ? joint pain ?*
3. *Past history :*
   - *When , where , by whom , how present?*
   - *need admission or not ? to the ward or ICU ?*
   - *How diagnosed (what investigation done for him)? Any sample of kidney taken?*
   - ***f/up** :*
     - ✓ *Is he in regular f/up ? with whom " nephrologists , pediatrician , or dietien"?*
     - ✓ *what they did in f/up ? is he in f/up of his weight and height ?*
     - ✓ *you remember maximum weight ?*
     - ✓ *are you check urine for protein by dipstick ?*

   - *Drug history : what is the treatment ? for how long ? what is the dose ? SE ? respond to treatment? After how many days remission achieved ?*
   - *Past history*
     - ✓ *of similar condition " buffyness of face ,…."-relapse? How many time / year.?*
     - ✓ *Hx. Of high bp. renal impairment ? blood in the urine?*
     - ✓ *Any past hx of hypovolaemia , infection , blood clots(thrombosis)? …..complications.*
   - *Past history of recurrent admission due to frequent relapse?*
   - *Past history of other illness in the past? Hx of chickenpox?*
   - *Past hx of blood transfusion ? or surgical operations ?*
4. *Nutritional history :*
   - ✓ *what type of food ? is he in special type of food? Any restriction of fluid and salt?*
   - ✓ *any allergy to any type of food ?*
   - ✓ *Any dietien involve ?*
5. *Growth hx. : any loss of weight ?*
6. *Allergies : " bee sting can cause nephrotic": any hx of allergy ?*
7. *Perinatal history : any concern regarding his pregnancy , delivery , or after delivery?*
8. *Vaccination history :*
   - ✓ *Is he vaccinated up to date ?*
   - ✓ *any extra-vaccine "pneumococcal , chicken box , influenza vaccine"?*
9. *Developmental history : any concern regarding his development?*
10. *Family history :*
    - ✓ *of similar condition ?*
    - ✓ *of kidney disease or SLE?*
    - ✓ *Is your husband is your relative ? degree of relative?*
    - ✓ *How many children you have?*

11. *Social history:*
    - *Personal*
    - *Economic*
    - *Environmental.*
    - *Impact of the disease on family?*
    - *Impact of the disease on pt.? schooling - peers*

What is your biggest worry ? frequent relapsing

DISCUSSION

What is nephrotic syndrome ? triad of

- *Proteinuria : (early morning protein : creatinine ratio > 200mg/mmol).*
- *Oedema*
- *Hypoalbuminaemia (< 25g/l)*

Causes of nephrotic syndrome :

- *1ry : idiopathic.*
- *2ry causes:*
    - *infection : hepatitis , GBS , TB , malaria.*
    - *SLE.*
    - *HSP.*
    - *Bee – sting.*

Important definitions in nephrotic syndrome

Remission : - ve urine analysis on 1st morning urine for 3 consecutive morning

Relapse : (common 2/3 of cases) 2+ or more proteinuria on dipstick on 3 consecutive days (1st morning urines.)

Frequent relapsing : 2 or more relapses within 6 month of diagnosis or 4 or more /year.

Steroid sensitive :- responds to the steroids in the first 4 weeks of ttt (Diuresis / Disappearance of edema / negative Proteinuria in 3 urine samples taken at night)

Steroid resistant : (Proteinuria persists after the 4-week ttt)

Steroid tolerant : Pt. with complications such as HTN / ↑↑ Wt. / cataracts / embolisms)

Steroid dependent : proteinuria appears when the dose of corticosteroid is decreased (alternate dose) or relapse within the first two weeks after treatment is stopped..

Management plan :

1. *Admission .*
2. *investigation :*
    - *Urine : dipstick , CS , early morning protein : creatine ratio , urinary sodium.*
    - *Blood for :*
        - ✓ *CBC .*
        - ✓ *urea and electrolytes , albumin , cholesterol .*
        - ✓ *C3 (reduce C3 is atypical feature) and C4.*
        - ✓ *Varicella zoster titres , hepatitis B and C serology.*
        - ✓ *Anti SO titre can be useful.*
    - *Autoimmune profile "in atypical features" : ANA , anti - double stranded DNA.*
3. *Management : MDT*
    - *General measures :*
        - ✓ *Dietician involvement : low salt diet.*
        - ✓ *Monitor and control fluid balance by input output chart and daily weight.*
        - ✓ *Check his Bp : need referral if more than 95 centile*
    - *Parent education :*
        - ✓ *aware of complication in particular if develop abdominal pain.*
        - ✓ *Aware of steroid side effects.*
        - ✓ *Urine dipped daily till remission then twice weekly while on tapering dose or child is unwell at any time .*
    - *Drug treatment :*
        - ✓ *Steroid treatment*
        - ✓ *Immunosupression drugs*
        - ✓ *Renal biopsy and referral to nephrologist in steroid resistant.*
        - ✓ *ACEI for proteinuria and BP.*
        - ✓ *Pencilline prophlaxisis.*
    - *Manage complications (see down).*

A. *Steroid treatment :*

1. *In case of Steroid sensitive (90%)*
    - ☒ *Prednislone (60mg/m^2 for 4 wk → 40mg/m^2 on alternate days for 4 wk. then stop. Or continue (30 , 20 , 10 , and finally 5) mg/m^2 4weeks each alternate days*
2. *In Relpsed cases:*
    - ☒ *Prednison (60mg/m^2 till remission then 40 mg/m^2 on alternate days for 3doses , and reduce alternate days by 10mg/m^2 every 3 doses and finally 5 mg/m^2 on alternate days for 3 doses , then stop)*

B. *immunosuppresion drugs: in case of Steroid dependent or frequent relapsing :*

- *Cyclophosphamide :*
    - ✓ *Dose : 2mg/kg for 12 weeks*
    - ✓ *SE : hair thining , bone marrow suppression.*
- *Tacrolimus : nephrotoxicity*
- *Cyclosporin :*
    - ✓ *Dose twice daily for 12-18 month*
    - ✓ *SE: hirsutism , gum hyperplasia , nephrotoxicity*
- *Mycophenolate (celcept tabs)*
    - ✓ *GIT intolerance , no nephrotoxicity.*

C. *Renal Biopsy + Refer to nephrologist. In case of steroid resistant*

- *Commonest treatment in resistant cases:*
    - ✓ *alternate day prednisolone combined with cyclosporine*
    - ✓ *ACE inhibitor and/or angiotensin II receptor blocker for HTN and proteinuria.*
    - ✓ *Renal transplantation can be consider.*

What are complications of nephrotic syndromes ?

a. *Complication of the disease :*
   I. *HYPOVOLAEMIA:*
      - ✓ *Presentations : abdominal pain , tachycardia , increase CRT , wide core-peripheral temp gap , increase PCV , decrease urine output…..(this how to check for hypovolumia in oedametus child)*
      - ✓ *Treated by : IVF isotonic saline , 20% albumin + lasix*

   II. *INFECTION :*
      - ✓ *increase risk of infection due to urinary loss of immunoglobulin and complement and steroid usage.*
      - ✓ *prone to pneumococcal , haemophilus influenza infections esp. peritonitis and septicaemia.*
      - ✓ *Prophylactic penicillin + pneumococcal and influenza vaccine.*
      - ✓ *Prone also to chickenpox (treated by acyclovir and VZ IG) and measles.*

   III. *THROMBOSIS :*
      - ✓ *due to loss of antithrombin 3 and hyperviscous blood*
      - ✓ *prevented by hydration and encourage mobilization.*

b. *Complication of treatment :*
   i. *DM , HTN.*
   ii. *Osteoporosis .*
   iii. *Reduce growth in children.*
   iv. *Gastritis / peptic ulcer.*
   v. *Glaucoma / cataract.*
   vi. *Acne / skin bruises.*
   vii. *Delay wound healing.*
   viii. *Increase risk of infection.*

What is possible causes of abdominal pain in nephrotic syndrome?

1. *Hypovolumia : due to splanchnic ischaemia.*
2. *Renal vein thrombosis*
3. *Peritonitis*
4. *Gastritis and peptic ulceration in case of predinsolone tabs*

When you refer to nephrologist ? if there any atypical features:

- *Age less than 1yr and more than 12yrs.*
- *Renal impairement*
- *Persistant HTN.*
- *Gross haematuria.*
- *Steroid resistant*
- *Steroid dependent*
- *Frequent relapses.*
- *Systemic features of vasculitis such as rash , arthropathy.*

- *Family history of systemic illness.*
- *Acute complications such as severe hypovolaemia , infection or thrombosis.*

FOCUS HISTORY ASTHMA

Scenario :

- *Sarah 11 year old Saudi girl , k/c of asthma , she came 3 days back with low grade fever , cough ,wheeze she receive bronchodilator but not good improvement.*
- *Please take history to solve sarah problem(for proper management).*

Dd of poor control of asthma ? the following very important to check in asthma:

- *Poor compliance to treatment regimen.*
- *Incorrect Technique or inappropriate device for child.*
- *Exacerbation of b.asthma due to Triggers :*
  - *Smoking , pets , reconstruction of home.*
  - *Allergy trigger.*
  - *Stress : physical or psychological.*
- *Pneumonia.*
- *Wrong diagnosis. May be cystic fibrosis., GERD.,CHD.*
- *Poor understanding of disease management.*

What to ask in asthma?

- *Analysis of presenting symptoms and related symptoms:*
  - *RS : cough ? SOB ? musical sound induce by exercise ?*
  - *CVS*
  - *CNS*
  - *Urinary*
  - *MSK*
- *Past hx :*
  - *when , where and by whom diagnosed and presentation at diagnosis.*
  - *how diagnosed (investigations , procedure)*
  - *need admission or not ? and where ICU/ ward? Need intubation or not?*
  - *Any more admission ?*
  - *What treatment given at that time? Like iv aminophyline or salbutamol.*
- *Drug hx:*
  - ✓ *What drugs given on discharge ?*
  - ✓ *method of administration (via spacer or how) ?*
  - ✓ *and by whom given ?*
  - ✓ *how many time /day? Do you forget to take your flixotide ?*
  - ✓ *Number of beta- agonist and steroid in last year.*
  - ✓ *Do you think steroid causing any side effects?*
  - ✓ *Other drug*

- *f/up :*
  - ✓ *any dietien involve.*
  - ✓ *number of GP and hospital visits in last year.*
  - ✓ *Regular Peak flow measure – dairy for peak flow.? Best peak flow?*
  - ✓ *Any prick test performed*
- *Any other previous illness ? any surgical intervension ? blood transfusion ?*

- *Hx of Allergies (v.important) : to any food , drugs , rhinitis , hay fever, ecezema*
- *Nutritional hx and growth : what type of food ? are you following weight and height ?*
- *Birth hx : bottle or breast fed?*
- *Vaccination and development(in brief if time allow)*
- *Family hx : of asthma and atopy.*
- *Social hx : v.important*
  - *details of housing : type of flooring ,furnishing , measure to reduce mite dust , recent house move or reconstruction of the house.*
  - *Smoking: anyone in the family smoking ? or someone visit home smoke? Or visiting someone smoke?*
  - *animals pets.*
  - *impact of the disease on pt : schooling , activity , development , growth.*
  - *Impact of the disease on family : social deprivation*

HISTORY IN DETAILS

1. *<u>General Principle:-</u>*

i. Introduce Yourself (Hello I'm Dr.mohammed a Registrar in Pediatric working in this Hospital.

ii. Check for Pt &Mother (I believe that you are the Mother of sarah. Could I know your good name please?)

iii. Welcoming (Thank you for coming to discus <u>sarah</u> condition)

2. *Chief Complaint:-*

- *Doctor : I received letter from GP that SARAH K/C of asthma , and she develop fever , cough and wheeze . am I right ? So , can you tell me more about this?*
- *Mother : yes you are right, her temp start to raise up and also develop cough and musical sound from her chest*

3. *<u>H_x of Presenting Complaint:-</u>*

❖ *<u>Analysis of fever :</u>*

- *For How long she has develop this fever ? 3days.*
- *how you know temp is high?*
- *which time of date it's increase?*
- *is it sudden or gradual onset?*

- *what thing u did brought temp down ? no drug relieve it?*
- *u notice anything make it more?*
- *Is it associated with any rigors? Or skin spot?*

❖ *Analysis of cough: u told also associated with cough and difficult of breathing , can u told me more about this ?*

- *Nature of cough :*
  - *is it dry or productive cough ?*
    - ✓ *if productive cough what is colour of sputum?*
    - ✓ *Amount of sputum ?*
    - ✓ *Is it ass with blood?*
- *Time of cough :*
  - *Is it more at night or during the day?*
  - *Is her sleep affected by this cough ?*
  - *Is the cough more during specific time of the year?*
- *Frequency of cough :(if night cough) ,*
  - *how much frequency awaken her ?*
  - *how many times per week attack of day cough?*
- *Relieving / aggravating :*
  - *anything relieving this cough ?*
  - *anything made it worse? e exercise*

❖ *Analysis of SOB:*

- *Is the cough associated with difficult of breathing?*
- *Is the difficult of breathing during rest or related to exercise?*
- *Is daily activity affected ?*
- *How much excersice precipitates dyspnea?*
- *Is it associated with chest pain?*
- *Is it associated with musical sounds from the chest?*

4. *Systemic review (other system):*

- *General : any concern regarding his weight? , any concern of her activity?*
- *GIT : what about his appetite? Is she feel thick (nausea)? Is she thrown up (vomiting)? Any episode of aspiration ?*
- *CNS : is there any abnormal movement? or headache ?*
- *Urinary symptoms: any concern regarding her urine?*

5. *past medical history : I know that sarah k/c of asthma . can you tell me more about it?*

x. *When she was Diagnosed? 4yrs back.*
xi. *Where was Diagnosed?*
xii. *Who diagnosed him?*
xiii. *Is she need hospital admission at time of diagnosed/or after that ? what was the sequence of admission/ at the time of diagnosis or after that :*

- *What was the diagnosis on admission?*

- *where was admitted – to high dependency unit (ICU)or the wards ?*
- *What investigations done for her ? they did c-x-ray , and blood test.*
- *what medication received ? is she need to put her in breathing machine? Is she receiving any drug through blood tube? Like iv salbutamol , aminophilin*
- *For how many days ? 2days.*
- *is she need any more admission after that?*
- *Number of GP AND HOSPITAL VISIT IN LAST YEAR?*

xiv. *Is she in regular f/up ? yes*

- *Whose is Following her(pediatric pulmolongist)? And what type of help offered?*
- *Are u doing regular lung function test – peak flow meter?*
- *Did u having dairy for recording this readings?*
- *What is measurement of last flow meter?*

xv. *Other past history : (atopy of the baby)*

- *She had any skin changes (ecezema) while nada was infant ? yes red cheecks with scratching.*
- *she developed before any seasonal symptoms like runny nose or wheezy chest or red watery eyes?*
- *Did for her any skin prick test?*
- *Hx. Of cystic fibrosis , CHD , GERD .*

6. *Drug history :? compliance to treatment*
   - *What drugs sarah is taking ? ventolin inhalor –blue color.*
     - *How much ?*
     - *how times per day ?*
     - *is she use inhaler alone or by help of someone else?*
     - *Is she used directly or via spacer?*
     - *Can u show me sarah how you use it?*
     - *when last time dose changed or adjusted?*
     - *Number of repeated prescriptions of beta agonist?*
     - *Not prescribe for u another inhaler (yellow /organe colour - flixotide)?*
     - *If taking flixotide , sarah did you ever to take your flixotide? If yes how often she missed?*
   - *Is she in any other drug (e.g steroid tab)?*
     - *If taking steroid , number of steroid courses given last year?*
   - *Is she having allergy to any drug?*
   - *What other drug currently received? Drugs induce asthma (Now days I took amoxicillin , NSAID , B-blocker ,).*

7. *<u>Family H_x :-</u> atopy of the family and asthma.*
   - *Any member in the family having similar condition?*
   - *Any member in the family having b. asthma ?*
   - *How many children u have?*

8. *Nutritional H_X :-*
   - *Any concern regading her feeding ?*
   - *Does sarah has allergy to any food ? atopy of pt.*
   - *Is she growing like her peer?*
   - *Is he followed by dietien ?*
   - *Any concern regarding his growth? Growth may affected by systemic steroid , poor control asthma.*

9. *Allergic hx.: food allergy , drug hx.*
10. *Neonatal history :*
    - *Any concern regarding neonatal period? Not pass stool or he was jaundice (clue of cystic fibrosis)*

11. *Immunization H_X:-*
    - *How about Vaccination (are they up-to-date)?*
    - *Did sarah take extra vaccine(BCG /Influenza / P.C.V.)? Yes influenza vaccine.*

12. *Developmental H_X :-*
    - *Do you have any concern about his development (like his pears)?*

13. *Social H_X :-*
    - *Environmental H_X :-*
      - *Smoking :*
        - *any one at home used to smoke ? yes father*
        - *is he smoking inside the home or outside? Outside.*
      - *Housing :*
        - *Is it ur own house or rented?*
        - *Recently did u shift to new house?*
        - *What type of furniture and type of flooring of the house?*
        - *Did u cleaning the furniture and floor regularly? What substance use in cleaning?*
        - *Any new reconstruction at home?*
        - *How many rooms at home?*
        - *Is the rooms well ventilated?*
      - *Animals:*
        - *U have any animals at home?*

- *Impact of the disease on pt:*
    - *What type of sport she preferred more?*
    - *Is the disease affect her exercise or activity ?*
    - *Is he missed school or performance affected?*
- *Impact of the disease on family:*
    - *Whose taking care of sarah?*
    - *Any social deprivation ?*
    - *What is job of you and ur husband?*
    - *Is the income satisfy ur needs ?Any extra finicial burden ?*
    - *Any finicial support ?*
- *Transport for f/up:*
    - *How can Transporting Pt for his F/Up ?*

***Summarizing the HX . THEN →*

- *What is your Biggest Concerns ?*
    - *Mother : This time I am worry b/c not respond well to inhaler last 3months back.?*
    - *Doctor : what u think is the cause of deterioration.?*

***Do you feel there is an agenda we didn't cover today?*

***Do you have any Question ?*

DISCUSSION

What is dd /problem list?

- *Sarah having poor control asthma 3 month back , may be due to:*
    - *Poor compliance.*
    - *Incorrect technique in using inhaler. And not suitable device.*
    - *Father is smoker (even he smoke outside but can also affect her).*
    - *Reconstruction of the house.*
    - *Sensitivity to drug (amoxicillin).*
    - *Chest infection.*
    - *Wrong diagnosis.*

clinical features for assessment of severity :

1. *Mild asthma :*
    - ✓ *Spo_2 > 92%*
    - ✓ *PEF > 50% best or predicted.*
2. *Severe asthma :*
    - ✓ *Spo2 < 92%*
    - ✓ *PEF 33 -50%*

- ✓ *PULSE : >140 (2-5yr) , >125 (more than 5yr).*
- ✓ *RESPIRATION : >40 breath/min(2-5) , >25 breath/min(more than 5yrs)*

3. *Life threatening :*
   - ✓ *Spo2 <92%*
   - ✓ *PEF <33%*
   - ✓ *Silent chest , cyanosis , poor respiratory effort , hypotension , exhaustion , confusion.*

What are CLASSIFECATION OF ASTHMA?

Type of asthma	*Symptoms*		*Less than 5 years*	*Older than 5 years*	
	Daytime	*Night time*	*Exercise tolerance*	*PEF or FEV1*	*PEF variability*
Mild intermittent	*Less than 2/week*	*Less than 2/m.*	*Tolerant*	*More than 80%*	*Less than 20%*
Mild persistant	*More than 2/week-but not daily.*	*More than 2/m. but not weekly.*	*Exercise symptoms*	*More than 80%*	*20-30%*
Moderate persistant	*Daily symptoms*	*More than 1/week*	*Frequent exercise symptoms.*	*60-80%*	*More than 30 %*
Severe persistant	*Continual throughout the day symptoms*	*Frequent night symptoms.*	*Exercise severely limited.*	*Less than 60%.*	*More than 30%*

1. *Intermittent asthma*

Asthma is considered intermittent if without treatment any of the following are true:

- *Symptoms (difficulty breathing, wheezing, chest tightness, and coughing):*
  - *Occur on fewer than 2 days a week.*
  - *Do not interfere with normal activities.*
- *Nighttime symptoms occur on fewer than 2 days a month.*
- *Lung function tests (spirometry and peak expiratory flow[PEF]) are normal*

2. *Mild persistent asthma*

- *Symptoms occur on more than 2 days a week but do not occur every day.*
- *Attacks interfere with daily activities.*
- *Nighttime symptoms occur 3 to 4 times a month.*
- *Lung function tests are normal when the person is not having an asthma attack.*

3. *Moderate persistent asthma*

- *Symptoms occur daily. Inhaled short-acting asthma medication is used every day.*
- *Symptoms interfere with daily activities.*
- *Nighttime symptoms occur more than 1 time a week, but do not happen every day.*
- *Lung function tests are abnormal .*

4. *Severe persistent asthma*
   - *Symptoms:*
     - *Occur throughout each day.*
     - *Severely limit daily physical activities.*

   - Nighttime symptoms occur often, sometimes every night.

   - Lung function tests are abnormal .

What investigation?

- *CBC : leukocytosis in case of bacterial pneumonia , lymphocytosis in case of viral pneumonia.*
- *Inflammatory markers: ESR /CRP*
- *RFT , LFT , SE.*
- *Lung function test – peak flow meter.*
- *C-x-ray : hyper inflated chest / pneumonic patches.*

What is your treatment plan?

What is the aim of treatment ?

- *Control of symptoms (include nocturnal and exercise induced).*
- *Prevention of exacerbations*
- *Achievement of normal physical activity and growth along e best lung function and with minimal side effects.*

a. *General measure: non-pharmcological*
   - *Check inhaler technique (inhaler with large volume spacer).*
   - *Avoid cigarette smoking (active or passive).*
   - *avoid animal dander*
   - *Measure to reduce house dust mite numbers (damp dusting , mattress covers , changing carpeted bedroom floors to laminated flooring and washing/freezing toys) .*
   - *Weight reduction*
   - *Educate parent and child about importance of steroid inhaler.*
   - *Encourage use of peak flow diary.*
   - *Optimize management of seasonal hay fever , And of management of infection.*

b. *Drug therapy: pharmacological*
   1. *Acute attack :*
      - *Mild – moderate asthma :*
        - ✓ *O2 (if O2 less than 94%) +*
        - ✓ *Salbutamol puff/ neb(2- 10 puff) +*
        - ✓ *Oral Steroids (0.5 mg/kg) stat dose*
      - *Severe asthma :*
        - ✓ *O2 +*
        - ✓ *Salbutamol puff(10 puffs) or neb (2.5 mg for less than 5yr , 5mg for more than 5 yr)*

- ✓ *Ipratropium promide neb.*
- ✓ *MGSO4 inhalor (150 mg)……(new guideline2016)*
- ✓ *Iv hydrocortisone (4mg/kg every 4 hours)*

- *Life threatening asthma :*
  - ✓ *Picu admission , inform consultant.*
  - ✓ *C-X-RAY , ABG.*
  - ✓ *O2 + contious salbutamol neb +ipratropium bromide + mgso4 neb + iv hydrocortisone.*
- *2nd line (iv drugs):*
  - ✓ *Iv salbutamol boulus (15ug/kg)*
  - ✓ *Iv salbutamol infusion.(0.3-1.5 ml/kg/hr)*
  - ✓ *Consider s/c adrenaline.*
  - ✓ *Consider iv aminophline bolus / infusion*
  - ✓ *Consider Iv mg sulphate*
  - ✓ *Consider mv.*

2. *Long term treatment : 5-12yrs (new guidelines).*
   - *Step 1 : mild intermittent asthma*
     - ✓ *inhaled short – acting beta 2- agonist / required.*
   - *Step2 : regular preventer therapy*
     - ✓ *Step1 + Add inhaled prophylactic steroids v.low dose (200 ug/day)*
     - ✓ *Indications : Used when using inhaled beta -2 agonist 3times/week or more. , Used of oral steroid in last 2 yrs.*
   - *Step3 : initial add on therapy*
     - ✓ *V.low inhaled steriod + Long – acting beta-2 agonist LABA e.g : salmeterol .*
   - *Step 4 : additional add on therapies (assessing LABA).*
     - ✓ *If no response to LABA (stop LABA and increase to low dose inhaled cortico steroid " 400 ug/day").*
     - ✓ *If inadequate response to LABA (continue LABA + increase inhaled steroid to low dose)*
     - ✓ *If still inadequate response inspite of LABA and low dose inhaled cortico steroid (continue both and add other therapy like LTRA).*
   - *Step 5: persistant poor control (HIGH DOSE THERAPY)*
     - ✓ *First check inhaler tequine , check management.*
     - ✓ *increase in the dose of inhaled steroid up to 800 ug/day.(MEDIUM DOSE) ,*
     - ✓ *ADDITION OF 4TH DRUD SR thyiophiline ,*
     - ✓ *refer patient for specialist care.*
   - *Step6 : continuous or frequent use of oral steroids.*
     - ✓ *Medium dose inhaled steroid + oral steroid .*
     - ✓ *Consider other treatment to minimize use of steroids.*

- ✓ *refer to respiratory pediatrician*

3. LONG TERM MANAGEMENT : YOUNGER THAN 5 YRS

- *Step 1 : mild intermittent asthma*
  - ✓ *inhaled short – acting beta 2- agonist / required.*
- *Step2 : preventer therapy (more than 2times/week)*
  - ✓ *Step1 + Add inhaled prophylactic steroids (200 ug/day)*
  - ✓ *Used when using inhaled beta -2 agonist 3times/week or more.*
- *Step3 : add on therapy*
  - ✓ *Very low dose inhaled steroid + Leuktrianes antagonist e.g montocolast"singular"*
- *Step 4 : persistant poor control*
  - ✓ *refer to respiratory pediatrician*

4. *new management :*
   - *IV mg sulphate in moderate – severe asthma*
   - *Monoclonal anti – IgE (omalizumab) antibody bind IgE so reducing circulating IgE , reduce sensitivity to inhaled or ingested allergens in moderate to severe.(for more than 6 yrs).:*
     - ✓ *Indications : impaired lung function test while pt. on high dose therapy (ICS , LABA , LTRA). , frequent asthma attack.*
     - ✓ *Given every 2-4 weeks SC depending on pt IGE level.*

What types of delivery devices?

- *Metered dose aersol inhaler + Spacer devices : volumatic/baby(younger than 4yrs age)*
- *Metered dose aersol inhaler + mouth piece (4-6yrs of age)*
- *Meter dose Dry powder : diskhaler , turbohaler , acuhalor.(above 6-8yrs age)*
- *Self – actuating aersol : autohaler / easibreathe.(children above 6yrs age).*

What are types of inhaler ?

1. *Aersol inhaler :*

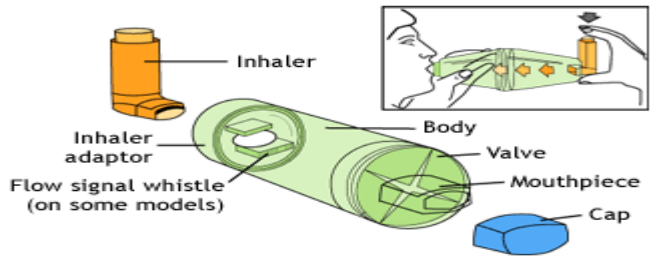
- *Meter dose : manul activated.*
- *Meter dose :*
- *Autohalor : breath activater*

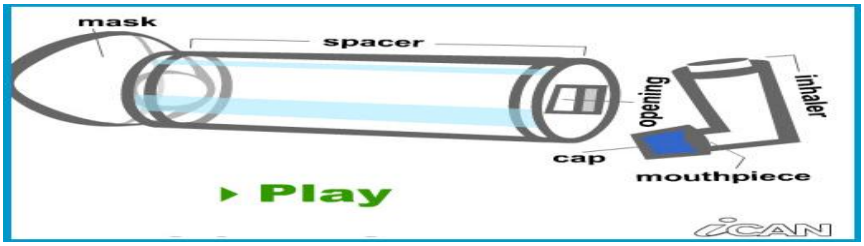
2. *Powder inhaler :*

- *Turbohalor :*
- *Acuhalor :*

Choice of inhaler device	1st line	2nd line
Children 2 – 4yrs	MDI plus spacer with facemask	Nebulizer** with face mask
≥ 4 – 6yrs	MDI plus spacer with mouthpiece*	MDI with spacer plus facemask
≥ 6yrs	MDI plus spacer with mouthpiece OR Dry powder inhaler***	MDI with spacer plus facemask

*To transition to a spacer with mouthpiece, children must be able to form a seal around the mouthpiece and breathe though their mouths
**MDI with spacer is as effective as a nebulizer
***Children must have enough inspiratory force to use a dry powder inhaler





b-thalathemia major

Case *: fadia is 13yrs old k/c of B-thalathemia major , came to ER with severe leg pain after felt down during school peer playing , e hx. Of loss of appetite in last 10 days with pallor , jaundice and abdominal distension.*

o/e: looks ill , in pain , pale , jaundice with hepatomegaly. X-ray reveal fracture lt. tibia.

Take hx. Of mother shadia and make management plan.

dd of chronic haemolytic disease:

- *B-thalathemia*
- *Sickle cell disease*
- *spherocytosis .*

b- thalathemia came with one of the complications:

- *Fracture due to oestopenia.*
- *Brusis due to hyper splenism*
- *Complication of over transfusion due to non compliance to chelating agents.*

What are the complications of B-thalasthemia?

a. *Complication of the disease:*
- *Hepato splenmegaly : bleeding due hypersplenism.*
- *Expansion of skull and face causing characteristic facies.*
- *Pathological fractures*
- *Impaired growth and delay puberty.*

b. *Complication of treatment :*

i. *Complication of frequent transfusion :*

- ✓ *Antibody formation , either red cell or HLA antibodies.*
- ✓ *Transmission of hepatitis B , C and HIV.*
- ✓ *Iron over load.:*
    - *Dialted cardiomyopathy : (Cardiac failure , arrythamia)Body swelling , palpitation , respiratory distress , syncope , orthopnea.*
    - *Diabetes mellitus after 10yrs)symptoms : polyurea , polydepsia , e weight loss*
    - *Chronic liver disease :(jaundice , haematemesis , epistaxisis , malena , abdominal distension.)*
    - *Hypothyroidism symptoms : constipation , weight gain , cold intolerance*
    - *Hypoparathyroidism symptoms : tetany , bone pain , fits*
    - *hypopituitarism.*
    - *Skin hyperpigmentation.*

ii. *Complications of chelating agents :*

- ✓ *Visual"night blindness" and hearing impairement.*
- ✓ *Yersnia infection : Abdominal pain , vomiting , malena*

- ✓ *Arthropathy*
- ✓ *Bone marrow suppression (Leucopenia and thrombocytopenia) sudden pallor , petechae , brusis , bleed*
- ✓ *Allergic reactions*

iii. *Complication of splenectomy:*

- ✓ *Recurrent infection.(bacterial sepsis).*

<u>What to ask in b-thalathemia :</u>

Ethinc origin : *originally from where you come ?*

HPI and systemic review : *looking for complications of the disease and treatment*

- *Growth : complications of the disease*
  - *What about pt growth ? either poor growth and weight loss " dm " or wt. gain" hypothyroid"*
- *CNS:*
  - *any concern regarding vision or hearing?*
  - *any abnormal movements " tetany /fits" – hypoparathyroidism.*
- *MSS:*
  - *bony pain ? any bone deformity? Or hx. Of fracture of bone?*
  - *any skin spots "brusis/petchia "? or hyperpigmentation?*
  - *Any allergic reactions*
- *Urinary system :*
  - *Polyuria , polydypesia "DM"*
- *Haematology hx.:*
  - *any yellowish discoloration "Jaundice "?*
  - *any bleeding from any site : hematemasis , epistaxis , malena ?*
  - *any pallor ?*
- *GIT :*
  - *what about bowel habit? :*
    - ✓ *constipation……."hypothyroidism".*
    - ✓ *loose stool …….."yersina infection".*
  - *what about appetite ?*
  - *any vomiting ?*
  - *any abdominal pain ?*
  - *any increase in tummy size ? since when ? gradual or sudden ?*
- *CVS: anybody swelling ? palpitation , resp. distress , syncope "cardiomyopathy ".*
- *RS : cough , SOB*
- *Puberty status "Tanner staging"?..... delay.*
- *Menstrual hx. "if girl":*
- *General : cold intolerance , reduce activity….." hypothyroid".*
- *Nutritional status : what about diet?*

PAST HX. : k/c of thalathaemia.

- *when diagnosis ?, where , how present ?*
- *Initial investigations ?*
- *Initial treatment ?*
- *Any regular f/up and with whom ?*
    - *doctor of blood , doctor growth , doctor of heart , doctor of vision and hearing .*
- *Any procedure : if late disease or on chelation agent*
    - *Liver biopsy*
    - *Audiotry assessment*
    - *Visual assessment*
- *Previous hospitalization*
- *Previous surgery (splenectomy).*
- *Any other medical problems?*

Drug hx.: (transfusion , chaleacing agents , …..)

- ***Transfusion hx.** : Age at first transfusion and Number of transfusion / year. how blood is arranged ? any reaction observed ? screening/ cross matching ? how blood given through central line "porta cath"*
- ***Chelation hx.** : whether started or not ? age of commencement of chelation? How frequency given ? which form of chelation (i.v , s/c , oral)? How frequent s.ferritin is monitored? What is last s.ferittin report ? what about compliance*
- ***Any plan for BMT given or not**?*
- *Any other treatment : folic acid , vitamin c , penicillin with splenectomy , insulin , ca/vit D , hormone for stature ?*

Perinatal hx. : perinatal diagnosis , hx. Of prolong jaundice , exchange transfusion

Vaccination hx. :

- *Routine.*
- *Hepatitis B , influenza vaccine.*
- *extravaccine in case of splenoectomy."pneumococcal and meningococcal "*

Developmental hx.:

Family hx. :

- *Is your husband is your relative*
- *How many children you have ? any other member in the family affected?*
- *Neonatal death in family. Hx. Of transfusion in family*
- *Plan for further children , genetic counseling.*

Social hx.:

- *Impact on pt :*
    - ✓ *frequent hospitalization .*

- ✓ *schooling: in which class ? school performance , amount of school missed , peer relation*
- ✓ *poor compliance , activity of the child*

- *Impact on parents :*
  - ✓ *Marriage stability .*
  - ✓ *Financial issue : supports , details about earning*
- *Impact on sibling : rivalry.*
- *Social support : social worker support , financial benefits.*
- *Coping : compliance , future plan.*

Any further concern regarding child health.

What is your bigesst worry

discussion

What is mode of inheritance and problem?

- *Autosomal Ressive / CH 11*
- *Deficient synthesis of either alpha " alfa thalathaemia " or beta chain of haemoglobin." B-thalathaemia".*
- *Present with progressive haemolytic anaemia during the 2nd 6 months of life.*

What investigation ?

- *can be diagnosed antenatally or on neonatal screening.*
- *CBC showing : microcytic hypochromic*
- *PBP showing : Poikilocytes , Target cells ,Nucleated red cells*
- *Electrophoresis : Increase in Hb F 90%. , No HbA. ,NORMAL Hb A2.*
- *DNA anylasis.*

What is management plan?

1/ hyper-transfusion regime : regular transfusion using leukocyte – depletion blood (monthly) to maintain Hb above 10 g/dl.(we will transfused if less than 6 - 7 g/dl).

2/ chelation therapy (with vit. C to enhance effect) : indicated when

- *ferritin reached 800 – 1000 mg/l. increase urinary excretion of iron.*
- *After 10 – 14 times of transfusion.*

3/ folic acid supplementation b/c increase erythropiosis.

4/ splenectomy : reduce transfusion requirement.

5/ bone – marrow transplantation : curative. And if failure of other measure " poor quality of life ".

6/ Gentic counseling.

Types and Side effects of chelation agents :

1/ Desferroxamine – desferal (daily – overnight S.C. infusion over 8-12h): better than deferiprone

- *Predisposition to Yersinia Infection.*
- *Night Blindness.*
- *deafness*

2/Deferiprone - ferriprox (tab –daily) : S.E. : better in case of cardiac cirrhosis.

- *Neutropenia*
- *Arthropathy*
- *Teratogenicity.*

3/deferasirox "ex jail" 20-40 oral tab once /day.

Indication of Splenectomy:-

1/Hypersplenism with pancytopenia.

2/ Blood T. > 240 ml /Kg / year.

3/ increase size of the spleen to degree that cause respiratory distress.

4/ Growth Failure .

5/ Haematocrit > 75%

What is the precausion before splenectomy ?

- *Oral Pencilline long life*
- *Vaccinations against :*
    - *pneumococus :*
        - ✓ *congated pneumococcal vaccine " if less than 2yrs" .*
        - ✓ *uncongated poly valent pneumococcal vaccine " if more than 2yrs"*
    - *Hib/ Meningococcus.*

<u>What are causes of hepatomegaly in thalathaemia ?</u>

- *Extra haemobiotic erythropiosis*
- *Hepatitis infection.*
- *Heart failure due to anaemia.*

What are problems of bone in case of b-thalathaemia ?

- *Osteopenia lead to pathological fracture.(osteopenia due to extramedullary haemopotic make the bone friagile).*
- *Oesteoprosis due to renal problem*
- *Arthropathy due to chaleting agents.*

What is treatment of pathological bone fracture in case of b-thalathaemia ?

- *Orthopedic referral for internal fixation.*

Celiac Disease

case :

- *Gp letter reffering osama 3 yrs old come with diarrhea mother concern not gaining weight like previous 2 brothers .Grand father and grandmother k/c DM.*
- *TAKE HISTORY FROM SANA a mother of osama.*

DD: malabsorption syndrome

- *Celiac disease. .(in case k/c celiac)*
  - ✓ *non compliance to gluten free diet .*
- *Cow milk protein intolerance.*
- *Cystic fibrosis*
- *Immunodeficiency.(cambylobacter or salmonella).*
- *Infection : giardiasis. (hx of similar condition , acute GE).*
- *Inflammatory bowel disease "IBD".*
- *Functional (toddler) diarrhea – (food particles in stool).*
- *Secondary lactose intolerance.(rota virus).*
- *Cholehic diarrhoea. (hx of cholecystectomy).*

What To Ask In Case K/C Coeliac With Loose Stools :

(Symptoms of DM1 /Symptoms of hypothyroidism/ vitiligo /addison /skin changes/anaemia)

HPI :

- *GIT :*
  - *What about bowel habbits ?*
    - ✓ *If loose stool ? Stool frequency ? duration ? amount?*
    - ✓ *consistency ? is it difficult to flush.(CF – celiac).*
    - ✓ *Colour ?*
    - ✓ *Contents : Blood/ Mucous. ? food particles ?*
    - ✓ *Aggravating/relieving : Related to any type of food?*
    - ✓ *Ass with excessive gas, offensive ?*
  - *Associated abdominal pain*
  - *Increase tummy size?*
  - *Appetite ? Any vomiting or nausea ?*
  - *Any swelling in private area ? grohn*
  - *Ass mouth ulcer ? grhon*
- *Growth and General :*
  - *wt. loss , wasted in buttock ? does u have chart? Any dietien involve?*
  - *and fatigue, fever*
- *Nutritional hx.:*
  - *recent dietary changes e.g : introduction of cereal , bread*
-

Systemic review :

- *MSS :*
    - *any skin changes ? itching and blistering "dermitis herpitiformis"*
    - *any change in color of skin : hyperpigmentation " adisson "? hypopigmentation "vitiligo" ?*
    - *joint pain ?*
- *Urinary symptoms : any concern regarding urination.*
- *CVS/RS : chest pain,cough , SOB.*
- *CNS : abnormal movement ? vision ? hearing ?*

Past hx : in case of k/c coeliac

- *When , where , by whom ?*
- *How diagnose ?*
- *Need admission or not ? where admitted ? for how long ?*
- *What treatment given?*
- *Any hx of DM , Addison , vitilgo , hypothyroidism , prencious anaemia?*
- *surgical .*
- *travel hx.(*

drug hx:

Birth hx :

Vaccination hx :

Developmental hx:

Family hx :

- *any fhx of similar condition ?*
- *fhx of DM , hypothyroidism , vetiligo , Addison , connective tissue disease, hepatic?*
- *atopy , CF , IBD.*

Social hx :

- *impact of the disease in family :*
    - *extra financial burden (gluten-free is expensive).*
- *impact of the disease on pt. :*
    - *missed school ? deteriorate school performance ? bulling at school*

<u>General Principle:-</u>

1. *Introduce Yourself (Hello I'm Dr mohammed a Registrar in Pediatric working in this Hospital)*

2. *Check for Pt &Mother(I believe that you are Mrs sana a mother of osama)*
3. *Welcoming (Thank you for coming to discus OSAMA condition)*

Chief Complaint:-

- *I have learned from the G.P. Letter that osama has loose motion and he fail to gain weight . am I right? Can you please tell me more about this?*
- *Mother : he has watery diarrhea since 1 year of age (on/off), last 2 weeks also develop loose motion.*

H_x of Presenting Complaint:-

a. *analysis of diarrhea , symptoms of dd and related symptoms:*

1. *Duration : For How long he has loose motion? Mother : 2weeks*
2. *Frequency :How many times per day ? Mother : 20 times /day*
3. *Amount : What about its amount? Mother: large.*
4. *Colour : what is the colour of his motion ? mother : yellow.*
5. *Contents : is it ass e blood ? or mucus ? is it contain food particles? Mother : no,no,no.*
6. *Consistency : is it difficult to flush ? mother : yes*
7. *did u notice any pain during passing motion "tensmus"? Mother : yes.*
8. *Relieving/aggravating factors : anything decrease this motion? No . is it improve by exclusion of any type of food? Or any medicine? Anything increase the motion? No .*

- *is it related to esp. type of food ?*
- *did u observe his buttock wasted (celiac) ?*
- *did u feeling any swelling in private area during u wash him (IBD – grohn's)?*

9. *any excessive gases ? mother : yes*
10. *is it offensive ? mother : yes.*
11. *any teeth problem ? any mouth ulcer? No*
12. *did he feel thick (nausea) ? yes . did he thrown up (vomiting)?*
13. *what about his appetite ? not good. Is he drink eagerly or refuse ?*
14. *any increase in his tummy size? Any tummy pain?*

- *General : is it ass with fever ? is it ass with skin spots?*
  - *What about his activity ?*
  - *what about his sleeping?*
- *Urinary system : any concern regarding his urine ? Any increase in frequency of urination"DM1".?*
- *RS (CF) :Any cough ? or difficult of breathing?*
- *CNS : any abnormal movement ?*

b/ analysis of weight loss : Also I came to know that ur concern about osama he is not gaining weight like other brother , can u tell me:

- *When came to ur concern that osama his weight not increase?*
- *How u know he is not gaining weight?*
- *Is this drop in weight gradually or rapid drop? Over how much time?*
- *Decrease day by day or static?*

- *Any intervention done for that? Does he change feeding pattern after that ? any response for that?*
- *Does u have chart for his growth previously?*
- *Any f/up for his weight?*
- *Any dietien involve ?*

C/ Nutritional history in detail:

- *Is he was in breast feed or formula? For how long*
- *What type of food u give now days?*
- *did u give especial type of food ?*
- *how many times /day?*
- *He had any allergy to any type of food?*
- *Time of weaning? Is it complete or partial weaning?*
- *Time of start to give him mix food? And what type of food u start with?*

Past Medical H_X :- (H.O.P.)

- *Hospital Admission : any history for admission ?*
  what is cause ? similar condition
  What was the diagnosis?
  What investigation/ procedure done? What was the treatment? Any f/up after that?
- *Operations done: any operation done for him – cholecystectomy (cholorhydrial diarrhea)?*
- *Previous illnesses.: does osama had any other problem previously other than loose motion?*
  - *Dm , vitigo , Addison , hypothyroid , prencious anaemia ?*
  - *Like recurrent infection , ecezema (R/O immundef.).*

Perinatal history:

- *Any concern regarding ur preg with osama?*
- *Any concern regarding delivery? What gestational age during delivery ? what was the weight?*
- *Any concern after delivery?*

Drug HX :- (M. A. C.)

- *Medications : is he in any current medications?*
- *Allergy to any drug.: is he having any allergy to any drug?*

Immunization H_X:-

- *What about his Vaccination (are they up-to-date)?*

Developmental H_X :-

- *Do you have any concern about his development (develop like his sibling)?*

Family H_X :-(D. D. C. T.) any concern regarding your family ?

- *Any family history of similar condition ? family history of DM , vitligo , Addison , hypothyroid , prencious anaemia ?*

- *Death in the family?*
- *Consanguinity (does your husband is close relative?)*

Social H_X :-(P. E. E.):

- *Impact of the disease on family:*
- *Impact of the disease on pt himself:*

Personal H_X:-

- *What is the Job of Parents?*
- *Who is taking care of Pt ?*
- *Dose Parents live together?*
- *What are Pt preferred (sports / play / activity)*

Economic H_X :-

- *The Income of the family*
- *Any other Financial support (Governmental / Agencies / Friends)?*
- *How can Transporting Pt for his F/Up ?*

Environmental H_X :-

- *Smoking / Alcohol Consumption /Drugs.*
- *Housing (Ventilation/ Bed rooms/ Pt has his own room/ NO of people in room)*
- *Animals (Pets in the house)*

- *Summarizing the HX . THEN →*
- *What is your Biggest Concerns ?*
- *Do you feel there is an agenda we didn't cover today?*
- *Do you have any Question ?*

DISCUSSION

WHAT IS DD?

- *Coleic disease (supported by age – FH of DM – not gaining weight).*
- *Cow milk intolerance.*
- *Protein losing enteropathy*

DD: malabsorption syndrome

- *Celiac disease. .(in case k/c celiac)*
  - ✓ *non compliance to gluten free diet .*
- *Cystic fibrosis*
- *Immunodeficiency.(cambylobacter or salmonella).*

- *Infection : giardiasis. (hx of similar condition , acute GE).*
- *Cow milk protein intolerance.*
- *Secondary lactose intolerance.(rota virus).*
- *Functional (toddler) diarrhea – food particles in stool*
- *IBD*
- *Cholehic diarrhoea. (hx of cholecystectomy).*

What is coelic disease ?

- *is a reversible immune mediated enteropathy of small intestinal mucosa due to ingested gluten*

Silent coelic : +ve serology and biopsy change in asymptomatic.

Latent celiac : refers to +ve serology but not histological changes.

Coelic crisis : rare complication characterized by :

- *Explosive diarrhea*
- *Abdominal distension*
- *Dehydration , electrolytes disturbance*
- *Hypoalbuminaemia*
- *TTT by steroid.*

What investigation?

- *CBC – RFT – LFT – Folate – B12 Level – Iron Level – SE and Minerals.*
- *Stool Analysis (to r/o others) For : Stool Elastase , C/S , Reducing Substance , cyst of gardia*
- *Serology : Screening.*
    - *IgA Tissue Transglutaminase.(Common)*
    - *IgA Reticulin.*
    - *IgA Antiendomethail*
    - *IgA Antigladin*
    - *IgG Antigladin*
- *Ig A LEVEL*
- *HLA DQ 2/8.*
- *Jejuneum Biobsy (Confirmatory):*
    - *Crypt Hypertrophy*
    - *Subtotal Vilous Atrophy.*
    - *Inter epithelial Lymphocytosis.*
    - *Lamina Properia Plasma Cell Infiltrate.*

New guideline in diagnosis coleic :

1. *If symptomatic :*
    - *1st do TTG-IgA test + IgA (or TTG-IgG in case IgA def.) :*
        - ✓ *If very high (over 10 times normal) (sugestive of vilous atrophy) :*

- *Repeat TTG (again very high) + anti endomysial antibodies (+ve) + HLA-DQ2/8 (+ve) ……..no need for duodenal biobsy.*

✓ *If high (less than 10 times)……..then proceed to duodenal biobsy.*

2. *If asymptomatic with Raised TTG ….. then test for HLA-DQ2/8 :*
   - ✓ *If HLA-DQ2/8 positive ……do biopsy .(regard less to which degree high TTG).*
   - ✓ *If HLA-DQ2/8 negative …..no need for biopsy (no celiac).*

WHAT IS CHALANGE TEST?

- *It's the test which used to assist in diagnosis of celiac .Give Pt. Gluten For 6 weeks and then do Biopsy (1st Test) then 2nd Biopsy After :*
  - ✓ *If Less Than 2yrs, and U Suspect Pt With Coliec Disease …. do Biopsy After Chalange Test.*
  - ✓ *If more Than 2 yrs And U Suspect Celiac Disease …. do biopsy Without Challange Test.*
- *Indication for Gluten challenging test(biopsy after 6wk. Gluten dieting) :-*
  1. *Uncertain (unconfirmed) Diagnosis.(low Gluten food)*
  2. *Diagnosis in < 2yr. of age.*

WHAT ARE COMPLICATIONS AND ASSOCIATIONS OF COLEIC DISEASE ?

- *Intestinal Lymphoma and oesophageal carcinoma.*
- *Dermitis Herptaformis*
- *Autoimmune disorders (thyroid , pernicious anaemia , DM)*
- *Ig A def.*
- *Oesteopenia and oesteoporosis.*
- *Dental Problems*
- *Failure To Thrive., Delay Puberty.*
- *Iron def anaemia*

What is your treatment plan? MDT (gastroenterologist , endocrinologist , dietician , social worker)

1. *Dietician for :*
   a. *Gluten Free Diets for life (no wheat , barley or rye)*
   - *resolves symptoms , reverse bone demineralization.*
   - *Maize and rice products may be eaten.*

   b. *F/UP :*
   - *for symptoms resolution , growth and compliance to gluten – free diet .*
2. *pediatrician and gastro entrologist :*
   - *vitamins and minerals .*
   - *prescribe steriod if develop celiac crises .*
   - *look for complication and small bowel lymphoma .*
3. *endocrinologist for ass autoimmune disease.*
4. *dermatologist for associated dermatitis herpitiformis .*
5. *social worker :*
   - *for finicial support and*
   - *provide Contact with Celiac D. Groups.*

6. *If diagnoses confirmed No need for more Gluten challenging test or biopsy.*

Follow up and montoring of celiac :

- ✓ *dietitian . The dietary impact of other medical conditions you may have will also be considered.*
- ✓ *Family screening – Family members should be screened for coeliac disease using the coeliac serology blood test. A positive blood test should be followed up by an endoscopy and small bowel biopsy to confirm diagnosis.*
- ✓ *Screening for oesteopenia or osteoporosis ….do Bone density scan –*
- ✓ *Screening for associated conditions:(DM , hypothyroidism , addision , precesious anaemia.)*
  - *Type 1 diabetes (fasting blood glucose test).*
  - *Electrolytes, e.g. sodium and potassium which measure kidney function.*
  - *Thyroid function test (Graves' disease or Hashimotos Thyroiditis).*
  - *Liver function tests.*
  - *Nutrient deficiencies – iron, calcium, phosphate, vitamin D, zinc, vitamin B12, folate, magnesium. Supplementation may be initially required to correct any deficiencies.*

After six months

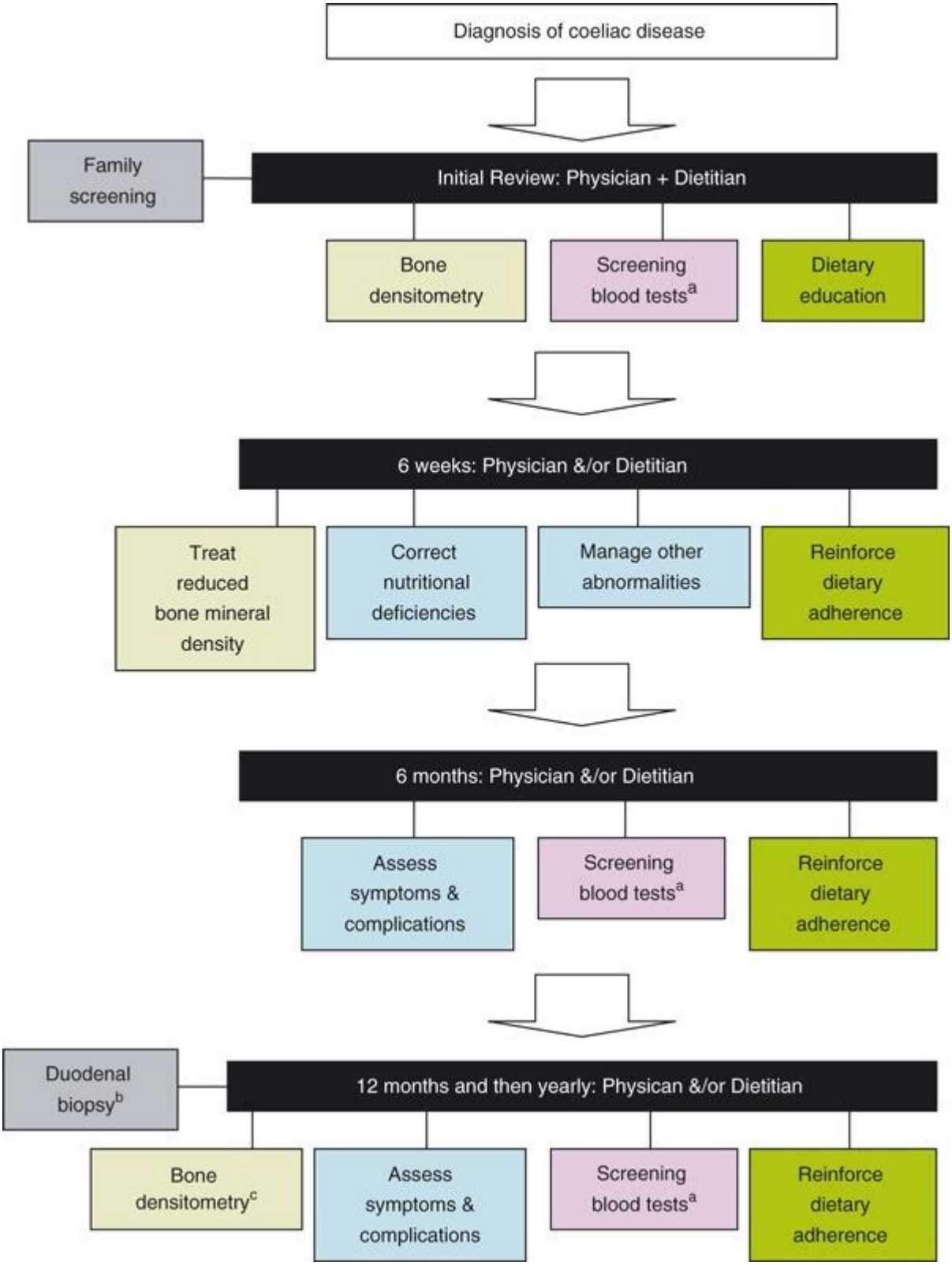
- ✓ *Coeliac serology blood tests (tTG, DGP, total IgA) should be repeated. While levels of these antibodies can remain elevated for some months post diagnosis. Once levels have returned to normal, subsequent re-elevation is a more reliable indicator of gluten re exposure.*
- ✓ *Other blood tests - A full blood count, electrolytes, liver function tests, thyroid function, iron studies, calcium, phosphate, fasting or random glucose, zinc and magnesium blood tests should be conducted.*

After 12 months

- ✓ *Duodenal biopsy – the duodenal biopsy should be repeated 12-24 months after diagnosis to confirm healing. Complete healing of the small bowel may take longer than 12 months.*

Ongoing

- ✓ *The coeliac serology and other blood tests should be repeated annually.*
- ✓ *The bone density scan should be repeated every two years if required.*


Diagnosis of coeliac disease
Family screening
Initial Review: Physician + Dietitian
Bone densitometry
Screening blood tests[a]
Dietary education
6 weeks: Physician &/or Dietitian
Treat reduced bone mineral density
Correct nutritional deficiencies
Manage other abnormalities
Reinforce dietary adherence
6 months: Physician &/or Dietitian
Assess symptoms & complications
Screening blood tests[a]
Reinforce dietary adherence
Duodenal biopsy[b]
12 months and then yearly: Physican &/or Dietitian
Bone densitometry[c]
Assess symptoms & complications
Screening blood tests[a]
Reinforce dietary adherence

CHRONIC RENAL FAILURE

Case : ahmed 7yrs old boy , k/c of CKD diagnosed 1yr back , came with anorexia , lethargy , polyurea , polydypesia , since that time not put in weight properly

o/e : looks sick pale , BP : 180/110 , in the abdomen there is peritoneal dialysis catheter.

Take history from aysha mother of ahmed .

Problems face the Pt. with CRF :

1. ***HTN***
2. ***Anaemia.***
3. ***Renal oesteodystrophy***
4. ***Hyperphosphateamia.***
5. ***FTT./growth retardation***
6. ***Bleeding tendency and infection***

What to ask chronic renal failure :

12. HPI: presenting complain can be :

- ***Fever***
- ***Respiratory distress***
- ***Pallor***
- ***Fits , altered sensorium***
- ***Generalize body swelling.***
- ***Bony deformity.***
- ***FTT***
- ***Petachea , bruses , bleeding.***

13. Symptoms analysis : search for causes ,complications , current status :

- ***urinary symptoms : cause of CRF***
  - ***hx. Of dysuria , polyuria/anuria , urgency , incontinence , poor stream , dribbling , retention , recurrent UTI , enuresis , haematuria , polydepsia***
    - ***frequency ? amount ? colour ? difficult in passing the urine ? passage of cravel ?stream of urine? Hx of recurrent uti?***
    - ***ass fluid intake , particuly need for night time drinks.***
- ***GIT symptoms : cause of CRF :***
  - ***Hx. Of salt craving , abdominal/flank pain , anorexia , nausea ,vomiting , abdominal distension , haematemesis , malena , jaundice. Bowel habbits ?***
- ***Haematology : cause of CRF:***
  - ***Hx. Of petechae , brusesis , bleed , pallor , blood treatment.***
- ***Respiratory : complication***
  - ***Hx. Of respiratory distress , cough , haemoptysis , exertional dyspnea , PND.***
- ***CNS : cause and complication***

- *hx. Of deafness , visual disturbance , headache , convulsion , confusion, focal neurological deficit/ weakness of any part of the body (CVA), neuropathy , itching (s/c ca deposition).*

- *General health (tiredness , sports , poor exercise tolerance).*
- *CVS : (HTN , cardiac failure symptoms , dyspnea , body swelling , palpitation).*
- *Growth : complications (monitoring weight , height , causes of poor growth).*
- *Skin : itching (uremia , or from microscopic s/c ca deposits , brusing).*
- *Skeletal : complication (bone pain , bony deformity , fractures , muscle cramps , muscular weakness).*
- *OTHER (important): HX. Of alopecia , hairloss , oral ulcer , photosensitvty , joint pain or swelling , eye swelling or buffiness , fever.*

14. Past history :

- *When , where , by whom , how present , need admission or not*
- *Initial investigations – which tests e.g: MCUG , MAG3 , DTPA , DMSA , RENAL BIOBSY.*
- *What diagnosis given ? and what underlining cause*
- *Treatment received in hospital.*
- *No. of hospitalization*
- *Complications (growth failure , anaemia , bone disease) and their management.*

15. Drug history :

- *Current medications (lasix , aldactone , ca-carbonate , vit D. growth hormone "any inj. Used to increase height" , erythropoietin" inj given s/c used for making blood") , drug side effects*
- *dialysis routine , management problems .*
- *Treatment at home*
- *Future treatment plans : haemodialysis , renal transplantation.?*
- *f/up (by whom , where , how often , routine investigation done)*
- *use of bracelet , alternative medications.*

16. Nutritional history : (esp. low phosphate , high calorie , low protein)

- *Current diet , compliance to diet.*
- *Through what oral / NGT.*
- *Any diet restriction?*

17. Perinatal history : antenatal u/s., oligohydraminos.

18. Vaccination history : any extravaccine? Hbsag before dialysis.

19. Developmental history :

20. Family history :

- *of similar condition , of renal problems (e.g nephronophthisis , polycystic kidney disease , cystinosis , tetany , night blindness).*
- *fhx. Of deafness (alport syndrome).*
- *Consanguinity*
- *How many children you have ?*

21. Social history:

- *Impact of the disease on family?*
  - *Finicial consideration (cost of frequent hospitalization , drugs , special diet , cost of renal transplant*
  - *Affect parent work*
  - *Transport , health insurance.*
  - *Impact on siblings : sibling neglect , sibling rivalry.*
- *Impact of the disease on pt.?*
  - *Missing school ? school performance ? limitation on life style , self esteem , peer reactions , future plans , education difficulties.*

- *Social support from e.g : social worker , dialysis and renal transplant associations.*
- *Understand of the disease : both child and parents*
  - *Understand and compliance of the drugs.*
  - *Any education / explanation by paediatrician*
  - *Who to contact when child unwell.*

DISCUSSION

WHAT IS CKD/CRF?

- *Renal injury (proteinuria) , or GFR < 60 ml/min/1.73m2 for more than 3 month*

What is the causes of CKD ?

- *Congenital : progress slowely "1st common cause".*
  - *congenital nephropathies (cystonosis ,) lead to cause oliguria , salt retention and HTN.*
  - *maldevelopment of urinary tract e.g dysplastic disease , lead to polyuria salt and water losing forms of CKD.*
- *Acquired : progress faster*
  - *Glomerulonephritis 30% : FSGS "2nd most cause".*
  - *HUS , nephrotoxin , SLE , IgA , HSP "1-3%".*

Or , IN OTHER WAY

What is etiology of CKD ?

1. *>5YRS:*
   - *Well thriving :*
     - *GMN (30%) : FSGS , MPGN , RPGN*
     - *IgA NEPHROPATHY (berger /HSP) , VASCULITIS (WEGNER) , microangiopathy (HUS , TTP)., antibasement membrane antibody disease.*
   - *FTT :*
     - *Reflxus nephropathy , nephronothisis , alport syndrome*
     - *Stones , puj , polycystic kidney.*
     - *SLE , drug induce , idiopathic*
2. *<5YRS :*
   - *PUV , neurogenic bladder ,*
   - *RTA*
   - *RENAL MALFORMATION*
   - *HUS , RVT , drugs*
3. *Throughout child hood :*
   - *Cystonsis , hyperoxalurea , cystic kidney disease.*

What are stages of CKD ? classified according to GFR TO 6 stages : normal GFR (100 – 120 ml/min/1.73 m2)

- *Stage 1: kidney damage with normal/ increase GFR (>90 ml/min/1.73 m2)*
- *Stage 2 :*

- *mildly decrease GFR (60 – 89 ml/min/1.73 m2).*
- *Preventing of the disease progression*

- ***Stage 3 :***
  - *moderately decrease GFR (30 – 59 ml/min/1.73m2)*
  - *Prevention of the disease progression + managing complications*
- ***Stage 4 :***
  - *Severly decrease GFR (15 – 29 ml / min / 1.73 m2).*
  - *Treating complication + prepare for dialysis or transplant*
- ***Stage 5 :***
  - *V.little GFR left (< 15 ml/min/1.73 m2).*
  - *Dialysis must.*
- ***Stage 5 d :***
  - *Renal transplantation required.*

What is significant of GFR ?

- *Above 30 (stage 1 , 2 , 3) , monitor .*
- *Between 15 – 30 (stage 4) , symptomtic , need medical manipulation.*
- *Below 15 (stages 5 and 5D) , renal replacement , waiting for transplant.*

How to calculate GFR ?

- *By Schwartz formula (GFR = 40 × height (cm) / serum creatinine (mmol/l)*
- *By DTPA clearance.*
- *By iohexol disappearance.*

What are limitations of GFR calculation ?

- *Under 2yr of age.*
- *Abnormal body proportions malnutrition or markedly reduce muscle mass.*
- *In acute renal failure.*

What is the difference b/w CRF and ESRD ?

- *ESRD is refer to the time when medical management is insufficient and renal supportive / replacement therapy is needed (dialysis or transplant).*

What are INVESTIGATIONS for CRF ?

- ***Blood :***
  - *CBC with peripheral smear : anaemia may be (normocytic normochromic , microcytic hypochromic , or macrocytic) , and platelet count.*
  - *RFT : decrease (high urea and creatinine).*
  - *S/E : increase/decrease Na , increase K.*
  - *S. ca (normal/decrease) , S.PO4 (increase) , s.ALP (INCREASE) , S.PTH (N/increase) , vit d3 (n/decrease).*
  - *S.complement C3 , ANA and anti-DsDNA.*
  - *GFR = 40 × Height (cm)/serum creatinine (mmol/l)*
- ***URINE :***
  - *Anylasis : for pus cells , specific gravity fixed at 1010 , protein , RBCs cast , C/S.*
  - *24 URINE collection for ca , ca oxalate , po4 , urea , creatinine , protein.*

- ***IMAGING :***
  - ***X-ray wrist , hand and knee (for rickets show osteopenic , +/-fractures)***
  - ***X-ray abdomen***
  - ***abd u/s KUB (for calculi , hydronephrosis / size and shape of kidney).***
  - ***ECG/ECHO***
  - ***DTPA / DMSA scanning/MCUG***
  - ***Renal biobsy.***

Management of CRF: multidisplanary team involve nephrologist , nutritionist , psychotherapist , social service , nurse.

1. ***Treatment of reversible kidney dysfunction by prevent:***
   - ***Nephrotoxic drugs***
   - ***Decrease renal perfusion***
2. ***Prevent or slow progression of disease by:***
   - ***Control of BP by ACEI , ARB-II***
   - ***Maintain normal s.phosphrus and Ca.***
   - ***Treatment of infection and dehydration***
   - ***Correct anaemia , hyperlipideamia , limit use of NSAIDS and smoking.***
3. ***Management of complications :***
   - ***i. Electrolytes and fluids :***
     - ***Either salt and fluid restriction (in case glomerular cause) , or high salt and fluid intake (in case of structural"cong." / tubular defect).***
   - ***ii. Hyperkalamia : K above 7 "emergency" , k above 5 " dietry k restriction".***
     - ***Restrict K.connect to minotor***
     - ***Ca – gluconate/chloride 10% (cardoprotective)***
     - ***NaHco3 iv …alkalosis (shift K from blood to inside cell).***
     - ***Dextrose 50% + insulin 0.1 u/kg (shift K inside cell).***
     - ***Salbutamol nebulization / iv.***
     - ***Sodium polystyrene sulphonate orally/rectally.(binds to K).***
     - ***Dialysis.***
   - ***iii. Hypertension :***
     - ***In ESRD : dialysis is treatment. Don't use antihypertensive because will deteriorate GFR and complicate dialysis by vasodilation.***
     - ***In CKD :***
       - ***Salt restriction 2-3g/day.***
       - ***Diuretics : thiazide " stage 1-3" , loop diuretics "stage 4"***
       - ***ACE I and ARBs II : for CKD with proteinuria as they prevent progression to ESRD.***
       - ***Other drugs : ca-channel blockers , B-blocker , and clonidine***
   - ***iv. Acid-base balance : due to inability to excrete H , due to inability to retain bicarb***
     - ***Rx. Of acute acidosis : dialysis preferable.***
     - ***Rx of chronic acidosis : alkali "NAHCO3 tab/liquid) 2-3 meq/kg/day , if intractable then dialysis.***
   - ***v. Bone disease 'RENAL OESTEODYSTROPHY': (high phosphorus , low ca and low vit D3)***
     - ***Low phosphate in diet***
     - ***Phosphorus binders : caco3 , ca acetate , aluminum compound.***
     - ***Calcium supplements : caco3.***

- *Vit D supplement : calcitrol (1,25 d3) , ergocalciferol .*
- *Partial parathyroidectomy.*
- *Regular dialysis.*

vi. *Stature (growth) retardation :*
- *Optimum nutrition , monitoring bone disease , correct of acidosis and anaemia , avoid steriods*
- *Growth hormone therapy "Rh GH":*
  - *DOSE: 0.05 mg/kg/day sc.*
  - *Indications : GFR less than 30ml/min/1.73 m2 , height less than 25 th centile for age , height velocity below 25th centile for bone age., Age more than 10yrs , no epiphseal closure.*
  - *Side effects of rhGH : hypercaliurea , aspetic necrosis of femoral head , pseudotumor cerberi , malignancy induction*
  - *We will continue growth hormone till epiphyseal closure or till renal transplantation , or it can discontinue if no response*

vii. *Nutrition :*
- *Protein restriction in children not advisable because of growth , however proteins of high biological value are advisable like meat , egg , fish.*
- *Limited use of milk b/c high phosphate contents , however certain infant formula are advisable.*
- *K-restriction : discourage tomato , splnach , dates , fresh juices , banana , citrus fruits.*
- *Supplement of Iron , zinc , water soluble vit.*

viii. *Anaemia:*
- *Eryrthopoietin :*
  - *Indications : hb fall below 10 g/dl., CKD stage 3-4 , symptomatic anaemia , anaemia inspite of adequate folic acid and vit b12 and adequate iron reserve and ferretin 20% . PTH must be normal and no infection.*
  - *Dose : 50 – 150 mg/kg/dose. Sc , 1-3 times / week.*
- *Iron and folate supplement :*

4. *renal replacement therapy :*
- *DIALYSIS :*
  - *Inidications : GFR less than 15ml/min/1.73m2 , failure of medical treatment to control complications (HTN enceph. , hyperkalaemia , ureamic eneph , ureamic pericaditis , urea more than 100-150 , fluid overload)*
  - *Types : heamodilaysis , peritoneal dialysis*
  - *Peritoneal dialysis is preferred in pediatrics than hemodialysis b/c :*
    - ✓ *Heamodynamic stable.*
    - ✓ *Simple and cheap.*
    - ✓ *Best pt. tolerant , best growth , best control of anaemia.*
    - ✓ *No need for hospitalization. Home base can be done by parent.*
    - ✓ *Not intervere with school*
    - ✓ *Continous dialysis.*
- *TRANSPLANTATION :*
  - *Conditions in which renal transplantation done : obstructive uropathy , SLE nephritis , alport syndrome*
  - *Criteria for performing renal transplantation :*
    - *CKD/ESRD.*
    - *Age and weight dependent to accommodate (at least 15 kg weight , more than 2yrs age.)*
    - *Adult kidney transplant*

- ***Good nutritional condition.***
- ***Absence of other chronic condition or systemic illness.***

- ***Post transplantation management :***
  - ***induction therapy : biological agents (ATG…..ANTI-IL2).***
  - ***maitaince therapy : steroids , tacrolimus , azathioprine , cyclosporine.***
- ***Post transplant follow up :***
  - ***Check growth and Bp***
  - ***Look for opportunistic infection.***
  - ***Metabolic workup , RFT , CBC , bone x-ray***
  - ***s/e of drugs (cushing…steroids) , (gingival hypertrophy , hypertrichosis ……cyclosporine) , (abdominal pain,diarrhea …MMF).***
  - ***Malignancy (lymphoma , skin cancer).***
  - ***Recurrence.***
  - ***Rejection.***
- ***Post transplantation complications :***
  - ***ATN.***
  - ***Rejection necrosis.***
  - ***Recurrence of original renal disease***
  - ***Infection(CMV , PCP) most common cause of death within 1yr.***
  - ***Bleeding***
  - ***Malignancy.***

5. ***Immunization : all scheduled immunization must received in addition influenza vaccine yearly.***

Allografts loss :

- ***Chronic rejection (most common) : tender graft , increase creatinine , increase WBCs***
- ***Acute rejection : 2nd most common cause***
- ***Vascular thrombosis : 3rd most common***
- ***Recurrent disease (FSGS***

Acute renal failure :

- ***Def.: sudden deterioration in renal function associated with retention of***

Diagnostic delima

CASE: cyanotic congenital heart disease

Linda is 5 years old girl , K/C cyanotic congenital heart disease , operation done for her when was 1day old and at 1yr of age.

GP refer linda to u b/c came recently with fever , sweating , SOB , cyanosis admitted to picu w

Take history from aysha a mother of linda , and make management plan

DIFFERENTIAL DIAGNOSIS :

- ***Infective endocarditis.***
- ***Pneumonia***
- ***Viral URTI.***
- ***UTI.***

1. General Principle:-

1/ Introduce Yourself (Hello I'm Dr. mohammed a Registrar in Pediatric working in this Hospital)

2/Check for Pt &Mother (I believe that you are Mrs. ayasha a Mother of linda)

3/Welcoming (Thank you for ur coming to discus linda's condition)

2. *Chief Complaint:-*

I learned from GP letter that linda is k/c of CHD which was corrected , recently came with fever , am I right ? Can you tell me more about this fever?

3. *H_x of Presenting Complaint:-*

- *fever : can u tell me more about this fever*
- *For how long having the fever? 3days back*
- *How mother know the fever ? by checking by ur hand or by thermometer?*
- *If check by thermometer , how much was the fever?*
- *what mother do to bring fever down (like analagsia)?*
- *anything make fever high ?*
- *is it sudden or gradual ?*
- *is it continues for whole the day or on/off? Is it more during day or night?*
- *Is it ass with sweating? Or ass e shivering ?*
- ***MSS** : Is it ass e skin spots? Is it ass with joint pain ?*

- *What is associated symptoms along with the fever ?*
- ***CNS** (Complications of endocaditis) :*
  - *Is it ass e abnormal movement (shaky or jerky movement)?*
  - *Any weakness in his body ?*

- *Any episodes of falling down?*
- *Any episodes of loss consciousness?*

- ***CVS /RS** :*
    - *Is it ass with increase in heart beat?*
    - *SOB : Is it ass with difficult breathing ? what things make it better , or worse ? At which time of day ?*
    - *Cyanosis : Any change of his lips colour? Is it static or increase ? anything increase it or decrease it ?*

    - *Is it ass with cough?*
    - *Is it associated with recurrent chest infection ?*
    - *Is it associated with any flow or running nose?*
- ***General** :*
    - *What about his appetite?*
    - *Is he sweating during feed?*
    - *Is his sleep affected?*
    - *What about his activity?*
    - *Any concern regard her weight?*

- ***GIT**:*
    - *What about his bowel habit?*
    - *Any episodes of throwing up?*
    - *Any tummy ache ? any increase in tummy size ?*

- ***Urinary symptoms** :*
    - *Any concern regarding his urination?*
    - *What about amount of urine?*
    - *What about colour of the urine?*
    - *What about odour of urine?*

4. ***past history** : I came to know that linda having heart defect when she was 2days old , am I right ? can u tell me more about this ?*

- *When was diagnosed ?*
- *How she was present at that time ?*
- *Where diagnosed and by whom??*
- *Does she required admission ? where admitted ?*
- *What investigation done for her?*
- *What treatment given?*
- *Surgery :*
    - *Does she require any type of surgery ? what is the operation ? where they did incision for operation?*

- *Any other operation ? what operation?*
- *Are they plan for operation in the future ?*

- *After how many days discharge ? what was her condition on discharge?*
- *Does she having any f/up?*
- *does she have any other illness? Any history of dental extraction? Any history of similar condition?*
- *Does she had any more hospitalization?*

5. *Nutritional and growth H_X :-*

- *Any concern regarding her feeding?*
- *What type of food ?*
- *How many meal per day?*
- *Any f/up with dietien ?*
- *Any allergy to any food?*
- *Do u have any concern regarding his growth ?*

6. *Drug HX :- (M. A. C.):*

- *Is he in any medicine currently or in the past?*
- *What is that ? when described ?*
- *Any prophlaxic antibiotic ?*
- *Any sensitivity to any medicine ?*

7. *PeriNatal H_X. :-*

Prenatal Hx

- *Did u have any infection during ur pregnancy.?*
- *Did u receive any drug during ur pregnancy?*
- *Are u have good antenatal f/up?*

Natal Hx:

- *Are u having any concern regarding her delivery?*

Post natal H_X :- or

- *Any concern after delivery?*

8. *Immunization H_X:-*

- *Any concern regard vaccination (are they up-to-date)?*

9. *Developmental H_X :-*

- *Do you have any concern about his development (like his pears)? I mean*
    - *When start walking?*
    - *Is his vision is normal?*
    - *Is he speaking to you?*
    - *Is he playfull?*

10. *Family H_X :-*

- *Any medical problem in the family?*
- *Any sudden death in the family?*
- *Is the husband is ur relative?*
- *How many children u have?*

11. *Social H_X :-*

- *impaction of the disease on her :*
    - *Is it affect her growth ?*
    - *Is it affect her development?*
    - *If in school is she missed school ?*
    - *Is it affect her school performance ?*
    - *Is it restrict her sports in school ? or is it affect her activity or playing ?*
    - *How teachers deal with her illness?*
    - *How their peers' attitude with her? Any teasing to her ?*

- *Impaction of the disease on family (parents and siblings)*
    - *What is the Job of u? and ur husband ?*
    - *Is the income satisfy ur needs ?*
    - *Any other financial support ?*
    - ***Is the disease made extra financial burden?***
    - *Whose taking care of her?*
    - ***Is the disease restrict ur social life ?***
    - *Is ur marriage life is stable ?*
    - *Any plan for further children ?*
    - *U did genetic counseling ? or are you aware of risk recurrence?*
    - *Is it affect sibling rivalry?*
- *Acess to local doctor :*
    - *Are U have ur own car ?*
    - *If u need u can easily reach local doctor ?*
- *Coping of the family with the disease:*
    - *U know what u will do if she develop cyanosis or febrile illness?*
    - *Are u aware of dental hygiene?*
    - *Are u aware about antibiotics prophylaxis for operation and dental procedures?*

- *Environmental H_X :-*
    - *Any one at home Smoking ?.*
    - *Housing :*
        - *is ur home rented or ur own home?*
        - *Is the home with the good Ventilation?*
        - *How many Bed rooms?*
    - *Animals : have u any animal in the house?*

- *What is your Biggest Concerns ?*

- *Do you feel there is an agenda we didn't cover today?*

- *Summarizing the HX . THEN → thank the mother*

Discussion

What is the diagnosis ?

this case of TGA e big ASD :

- ***1st operation in first 24 hrs is complete correction of TGA.***
- ***2nd operation at 1 yrs of age is insertion of base maker***
- ***They plan to correct ASD at age of 5 yrs of age.***

What are problem list ?

- ***FTT***
- ***Social problem.***

What is dd?

- *Infective endocarditis*
- *Pneumonia*
- *Heart failure.*
- *Viral urti*
- *UTI.*

What investigation?

- *CBC*
- *CRP./ESR/ASOT*
- *URINE for blood.*
- *Blood c/s : 6 blood c/s from different sites at different times over 2days.*
- *C- X-ray .*
- *ECG :*
- *ECHO (transthorasic): for vegetation.*
- *Consider ventilation – perfusion scan , white cell diff.*

What is treatment for infective endocarditis ? MDT involve pediatrician , cardiologist , dietien , dentist

- *I.V antibiotics :Treatment for 6 weeks , according to causative organism :*
  - *Streptococcus viridians ……..pencillin + gentamycin.*
  - *Staphylococcal(auerus and epidermis) ……..flucloxacillin + gentamycin.*
  - *Strept faecalis ……..amoxicillin + gentamycin.*
  - *Candida infection (- ve blood c/s)……amphotericin +flucytosine*
- *Prophlaxic antibiotic*
- *Surgical exploration in case of :*
  - *Failure of medical treatment.*
  - *Prosthetic valve*
  - *Patch, homograft*
  - *Pacemaker.*
- *Dietien : High caloric diet .*
- *Dentist : Good oral hygien*
- *Social worker : Social support.*

What is preventive measures ?

Faltering Growth

Δ.Δ. of FTT :-

1. *↓↓ Intake due to :*
    - *Social factors :Neglect / maternal depression / poor parent skills/poor feeding behaviour.*
    - *Food Refusal .*
2. *Malabsorption :*
    - *Pancreatic insufficiency : CF , swachman – diamond syndrome.*
    - *Acquired enteropathy : post infective / cow milk protein allergy or coelic*
    - *IBD*
3. *↑↑ Loss (D^O / V^O / GERD)*
4. *low genetic growth potential : familial , SGA , genetic syndrome.*
5. *increase energy expenditure :*
    - *chronic illness like renal failure , liver failure , CHD , endocrine problems , hypothyroidism , asthma , immunodef., malignancy.*
    - *iron def. anaemia*

What to ask in FTT:

12. *Growth Hx in detail :*
    - *Time at which Wt become Static ? any preceding illness ? is it significant wt loss? Did you check in clinic? Anyone told you weight and height in which centile ?*
    - ***Have you any growth chart ? what about last height and weight?***
    - *Any concern regarding his parent HEIGHT/WEIGHT ? any one did MPH?*
    - *did you have f/up? Any f/up With dietien ? what intervention he did? What is the effect of intervention?*
13. *Nutritional HX in detail .*
    - *Tell me about his feed - since birth till now ?*
    - *what type of milk given "breast , formula , or cow milk" ?*
    - *how many time /day?*
    - *If weaned : time of weaning ? is it smooth weaning?*
    - *if in formula/cow milk : how you prepared ? volume given each feed ?*
    - *If solid food started : time of introduction of solid food ? how much of diet still consist of milk ? what type of food you start? Any recent change in food like introduce of egg , wheat ? How many meal /day ? how much amount ? have you any food diary ?*
    - *How taking feed orally or NGT ? who is given feed?*
    - *Any difficulty with feeding process (SOB , uncomfortable)? Any difficulty with swallowing or chewing ? Is he vomiting immediately after feed ?*
    - *Any H_X. of Food allergy .*

14. systemic review : Clinical features of Celiac D. / C.F. / Ch. Illness .

- *G.I.T. symptoms :*
  - ✓ *What about bowel habbit? Stool frequency , consistency , and color ? does it contain blood ? is it difficult to flush ?*
  - ✓ *Deos he vomit ? if vomiting… frequency ? character ? is it ass with food ?*
  - ✓ *is she nauseated "anorexic "?*
  - ✓ *What about her appetite ?*
  - ✓ *Any increase in her tummy size ?*
  - ✓ *Hx. Of jaundice " chronic liver disease"?*
- *RS symptoms :*
  - ✓ *is he had cough ? difficult of breathing ?*
  - ✓ *hx. Of recuurent otitis media "immunodef"*
- *General : activity ? sleepness? Pallor?*
- *MSS : any skin spot? Joint pain and swelling " in immunodef. Disease"?*
- *CVS: any swelling in feet ? difficulty of feeding / or sweating ass. With feeding ? bluish discoloration of body?*
- *CNS : any abnormal movement ? any weakness in any part of the body " bulbar and pseudobulbar palsy"?*
- *Urinary symptoms : any concern regarding his urination ? how many wet nappies he has per day ? colour and smell of urine ?*

15. Past history:

- *previous illness ? hx. Of jaundice " ch. Liver disease" ? hospital admission ?*

16. Perinatal hx :

- ✓ *any concern regarding his pregnancy ?*
- ✓ *what is the mode of delivery? Birth weight ? gestational age?*
- ✓ *Any difficulty after delivery ?*

17. Drug hx : what is current medicince ? any drug allergy ?

18. vaccination

19. development : development delay

20. Family Hx:

- *Any similar condition ?*
- *Are parents health status was ok? Any hx of psychiatric illness?*
- *Is your husband is your relative ?*
- *how many member in the family " how many children you look after "?*

21. Social :

- *Personal : seeking for the cause of FTT.*
  - ✓ *job of the parents ? education of the parent ? what is age of parents?*
  - ✓ *Is your husband life with you ? stable marriage ?*
  - ✓ *whose taking care of patient " may be mother is busy "? anyone else helping in taking care of him?*
- *Economic :*
  - ✓ *Is the income satisfy your needs ?*
  - ✓ *Any Finical support ?*
- *Environment :*

- ✓ *Smoking : anyone in the family smoking ? or alcoholic ? or drug abuser?*
- ✓ *Housing : rented house or owner ? how many rooms you have ?*
- ✓ *Animals : have you any animals at home?*

- *Impaction of the disease on family ?*
  - ✓ *Social isolation ?*
- *Impaction of the disease on baby ?*
  - ✓ *Growth , development , activity ?*

Discussion

What we mean by failure to thrive ?

- *An infant or older child who fails to gain weight as expected.*
- *Growth below the 2nd centile or a change in growth that has crossed downwards 2 major growth percentile in short time "4months or more ".*

Management:-

1/ Investigations :

- *Stool analysis : CS , microscopsy for ova ,cysts and parasites*
- *Urinanalysis : for protein , nitrates and blood.*
- *C.B.C. and film , WBC , ESR.*
- *Iron studies.*
- *Chemistry : urea , creatinine , s/e , bicarbonate , Ca , and albumin.*
- *Screen for coelic (tissue transglutaminase autoantibody and IgA).*
- *Screen for cystic fibrosis (Sweat Test).*
- *Imaging : c-x-ray , bone age ,GIT imaging .*
- *endoscopy .*

2/ Multidisciplenary team : can be manage as outpatient :

- *Dietician : for caloric assessment , record height , weight each visit .*
- *Child Psychologist consultation : evaluation of child's cognitive development , food refusal , family dynamics.*
- *Treat the cause.*
- *If social problem responsible :*
  - ✓ *Admission to the ward to for good weight gain out of home environment.*
  - ✓ *G.P. , Health Visitor , social worker support and Community Nurse provision*

Eczema

SCENRIO :

ALI 11 yrs old , skin rash for 2yr on/off on arm and leg , erythamtous , scaly with pruritis , received topical steroid for 6 month on/ off with some improvement. Take hx and make management plan.

DD :

- *Contact dermtitis. : point in hx with eczema:*
  - ✓ *Distrubation of the rash - flexor*
  - ✓ *Infantile eczema.- red cheecks.*
  - ✓ *Fhx of allergy.*
  - ✓ *On/off symptoms.*
  - ✓ *Exccerbation with soap , clothes.*
- *Hyper IgE syndrome job syndrome:*
  - ✓ *Esp. face.*
  - ✓ *recuurent skin abscess , chronic dermitis , sinopulmonary disease*
- *Wiskott aldrich syndrome : triad of :*
  - ✓ *thrombocytopenia + immunodef. + chronic eczema.*

What to ask:-

HPI and systemic symptoms :

- *Anylasis of symptoms:*
- *describe the rash : site of rash ? shape of rash ? colour ? is it dry or wet ? is it itchy ? any ozzing ?*
- *time of day : affect sleep.*
- *duration of symptoms:*
- *frequency of symptoms and severity :*
- *⬆⬇ Factors .*
- *is it increase with dust ,soap , esp. type of food , esp. type of clothes , whether or contact with animals.*
- *Associated symptoms : fever , bruses on the skin , recurent chest infection*
- *GENERAL : fever , affection on sleep ,*
- *R.S : cough ,SOB , wheezy sound*
- *CVS : awareness of heart beat.*
- *CNS : abnormal movement ? any concern vision or hearing?*
- *GIT : bowel habbit ? vomiting ? apetite ?*
- *MSS :*
- *URINARY :*

past history :

- *When / How / Who / Where Diagnosed.*
- *Frequency and severity of exacerbations ?*
- *need hospital admission ?*
- *investigation done for him ? skin brick test*
- *f/up .(with pediatrian and dermatologist).*

- *any advice ?*
- *hx of 2^{RY} Bacterial infection(weeping/ pustules / crusts /Failing to respond to therapy /fever malaise)*
- *Hx. Of infantile eczema : during infant period any hx of red check and itching.*

Other Atopy :

- *hx. Of Asthma / Food Allergy / Hay fever / drug allergy.*

Drug H_X :

- *ttt: type :topical & oral / differentiate b/w creams and ointment /Frequency /*
- *Anti Biotic / How apply topical ttt./ Does child apply treatment at school.*

Birth hx.:

- *Any concern regarding pregnancy of her?*
- *Or her delivery .*

NUTRITIONAL HX. And growth :

- *breast feeding or bottle feeding ? for how long ? time of weaning ?*

Vaccination :

Development :

Family H_X :

- *Similar condition .*
- *Of atopy , asthma , food allergy , allergic rhinitis (seasonal symptoms).*

Social H_X:

- *Personal*
- *economic*
- *Home Environmental (Dust /Mite), any smoking or animal .*
- *Impaction on pt (School/Sleep / depression).*
- *Impact of the disease on family:*

Discussion

What investigations : to r/o other causes

- *CBC*
- *IMMUNOGLOBULINS*

Management (Stepped approach):- MDT (dermatologist and pediatriacin)

a. *General measures :*

1. *Avoid precipitant Factors (soaps , wool , rough clothing)*
2. *Nail Care.*
3. *parental education.*
4. *allergen avoidance*

b. *Specific ttt :-*

1. *Emollients for bath or shower :*

- *soap substitutes e.g EPADERM ointment mixed with water*
- *cream / oil.*

2. *Topical Steroids :application only once or twice daily / to areas of active atopic eczema (Intermittent Potent Topical is safe as Continuous Weak Topical)*
   (mild steroid : hydrocortisone 1%) (moderate : b-methazone) (potent - dermovate.)
   - s/e of topical steroid : thining of skin . striae . discolouration
3. *Topical Calcineurin Inhibitors (Tacrolimus) used in Face. (s/e burning sensation)*
4. *Bandaging (Wet & Dry Wraps) Medicated dressings and dry bandages.*
5. *Antibiotics : (oral flucloxacillin) For Infected Eczema(Moderate/Sever) for 10—14day. Take skin swabs first.*
6. *Phototherapy and systemic ttt. By dermatologist.*

Complementary ttt : (Homeopathy, Herbal medicine, Massage) It's effectiveness and safety not yet been adequately assessed in clinical studies.

<u>7) recognition and treatment of eczema herpeticum:</u>

- treatment : admission , iv acyclovir

<u>what are indications of hospital admission?</u>

- *Bacterial infection*
- *Ecezema herpeticum*

CAH

What are causes of problems (high BP , OBSITY) in case of CAH :

- *Non compliance to drugs or f/up.*
- *Wrong dose (may be high dose.).*
- *Nature of the disease (11 b- hydroxylase)*

What to ask in CAH:

1. ***HPI AND systemic review* : *anylasis of current symptoms***
   - *G.I.T. symptoms : appetite , bowel habits ? vomiting ? abdominal pain?*
   - *RS symptoms : is he had cough ? difficult of breathing ?*
   - *General : activity ? sleep ?*
   - *MSS : any skin spot?*
   - *CVS: any swelling in feet ?*
   - *CNS : any abnormal movement ?*
2. *Nutrional hx. and growth hx. : tall stature / precocious puberty*
   - *Any f/up with dietien or doctor of growth ?*

3. ***Past history:***
   - ✓ *If k/c : when diagnosed , who , how ?*
   - ✓ *need admission or not and where?*
   - ✓ *What investigations and treatment received?*
   - ✓ *previous illness ? high BP.*
   - ✓ *are you aware of need for additional steroid replacement during stressful conditions (illness or surgery.)?*
   - ✓ ***other hospital admission ? need i.v steroid due to illness**.*
   - ✓ ***Any surgical operation done / or any appointment for surgery** ? cliteroplasty , vaginoplasty*
   - ✓ *Is she on regular f/up ? with dietein , checking of growth parameters*
   - ✓ *home monitoring ? 17 – OH – progesterone can be measured in saliva and paper blood spots (biochemical control assessment)*
4. **Perinatal hx :**
   - ✓ ***any concern regarding her pregnancy ? any antenatal diagnosis ? any drug received during pregnancy** ?*

- ✓ *any concern regarding her pregnancy?*
- ✓ *Or after delivery ?*

5. *Drug hx :*
   - ✓ *what is current medicince ? steroid replacement for life.*
   - ✓ *How often taken ? you give it regularly ?*
   - ✓ *who give medicine ? how you give ? any s/e of medicine develop?*

6. ***Vaccination : any** extra vaccine (b/c on steroid).*
7. ***development :***
8. ***Family Hx:***
   - *Any similar condition ?*
   - *Any family hx. Of unexplained infant male death.?*
9. **Social :**
   - **Personal :**
   - **Economic :**
     - ✓ *Is the income satisfy your needs ?*
     - ✓ *Any Finical support ?*
   - *Environment :*
     - ✓ *Smoking : anyone in the family smoking ?*
     - ✓ *Housing : rented house or owner ? how many rooms you have ?*
     - ✓ *Animals : have you any animals at home?*
   - *Impaction of the disease on family ?*
     - ✓ *Social isolation ?*
   - *Impaction of the disease on baby ?*
     - ✓ *Growth , development , activity ?*
     - ✓ *(If teenager)Any effect on school like bulling b/c either of tall stature or precoiusus puberty ?*

Discussion :

Dd of ambgious genitilia :

a. *Masculinized female /Female pseudohermaphroditism (46 xx): only vililization of external genitalia , while internal organ develop due to :*
   - *External androgens : contraceptive pills.*
   - *Endogenous androgen : CAH (21 Hydroxylase , 11 b hydroxylase).*

b. *Under masculinized male/ male pseudohermaphroditism (46 xy): incomplete virilization of external genitilia but normal testis.*
   - *Partial testicular failure*
   - *Partial androgen insensitivity*
   - *5 alfa reductase def.*
   - *CAH (3b- , 17 a-hydroxylase)*
   - *Smith – lemli –optiz.*

c. *Abnormal gene/ true hermaphroditism (xy , xx , or xx/xy)*

What we mean by CAH ?

Is autosomal recessive disorder , commonest cause of ambiguous genitalia charectrised by virilization due to lack of negative feedback on ACTH , causing excess adrenal androgen production.

Causes are : due to def of :

- *21 – hydroxylase enzyme (90%) required for cortisol biosynthesis.*
  - *2/3 salt loser*
- *11-b hydroxylase enzyme (5%)*

What are causes of high BP in case of CAH:

- ***11 b-hydroxylase***
- ***s/e of steriod treatment.***

Management:-

1/ *Investigation :*

- *Biochemistry : electrolytes normal at birth.*
- *24 hour urinary steroid profile : elevated plasma 17 hydroxy progesterone is indicative of CAH.*
- *Karyotype to r/o under virilization of the male due to androgen insensitivity syndrome.*
- *Pelvic U/S scan.: to look for presence of uterus and gonads.*
- *home monitoring ? 17 – OH – progesterone can be measured in saliva and paper blood spots (biochemical control assessment)*
- *screening test : filter paper blood spots measure 17-oh-progesterone.*

- *prenatal diagnosis :*
  - ✓ *by chorionic villus sample early in pregnancy.*
  - ✓ *Amnio centasis : high 17 – OH – progesterone.*

2/ Multidisciplenary team :

- *parents*
- *surgeon*
- *endocrinologist*
- *Medical treatment :*
  - *Hydrocortisone (Glucocorticoid replacement) : 10 – 15 mg/m2 /day(bid/tid.)*
  - *Fludrocortisones (Mineralocorticoid replacement) : 0.05 – 0.1 mg OD.*
  - *Additional sodium chloride supplementation.*
- *Surgical treatment :*
  - *Clitroplasty : reduction of enlarged clitoris (performed in infancy).*
  - *Vaginoplasty : division of fused labial folds (performed in puberty).*
- *Prevention of virilized organ : by Prenatal treatment (reduction in virilization of external genitlia): by giving mother at risk , oral dexamethazone from 5 weeks gestation till 10 days before amniocentesis (for sex and level of 17 – oh-progesterone) , then :*
  - ✓ *if fetus female and 17 – OH – progesterone elevated …….continue dexamethazone till delivery .*
  - ✓ *If male fetus or unaffected female …… stop dexamethazone.*

EX-PREMATURE BABY WITH RECURRENT WHEEZE

CLD -BPD

Case 1: you receive GP letter about adam 1yr old boy with mild fever , cough and wheeze not response to salbutamol in last 4 days. Adam is EX.PT 30 weeker with hx. Of PROM , SVD, admitted in nicu for 1month .

take hx. From adam mother and make management plan.

What are DD. of wheezy chest in infant "ex-premature"?

- *CLD.(following barotraumas , went home at O2). Baby can present with residual wheeze.*
- *Bronchilitis (age below 2yrs).*
- *Early Asthma (breast or bottle fed , ecezema , trigger factor).*
- *GERD.*
- *Inhaled foreign body.*
- *Pertussis*
- *Cystic fibrosis*
- *Cong. Airway malformation*

Complication of CLD ?

- *Inter current viral infection , complicated by bacterial infection.(antibiotic , recommencing oxygen therapy).*
- *Upper airway obstruction*
- *Apnoea and bradycardia (treated by caffeine citrate)*
- *Pulmonary HTN./ core pulmonale.*
- *Hearing loss / ROP*
- *learning disabilities , attention deficit and behavior problems*
- *Sudden death*

Problems face the Premature Babies:-

1. *Ch. Lung Disease :-*

- *long term respiratory function of ex-premature babies is good , most they weaned off oxygen before discharge. May need O2 at home for weeks or months.*
- *More Sever Wheezy episodes*
- *Low threshold for admission.*
- *Should take special Vaccines (influenza / Pneomococcal / RSV)*

2. *P.D.A. : Can be managed by :*

- *Medical ttt (Ibuprofen / Indomethacin) or*
- *Surgical ligation (Banding) for those not response to medical treatment and is ventilator dependent.*

3. *Feeding & Nutrition :-*

- *T.P.N. and it's complications (extravasation injury , Thromboses / Infection , Jaundice)*
- *Difficult in feeding .*
- *poor weight gain.*
- *NEC.*

4. *I.V. Hge.:- (especially those under 32 weeks)*

Grades:-

- *Grade 1 : subependymal Germinal matrix.*
- *Grade 2 : I.V. & <u>NO</u> ventricular dilatation*
- *Grade 3 : I.V. + ventricular dilatation*
- *Grade 4 : parenchymal He*

<u>Prognosis</u>:

- *Grades:- 1 and 2 good prognosis(no long-term effects).*
- *Grade 3:- <u>possible</u> impairment on the contra lateral side.*
- *Grade 4:-motor impairment on contra lateral .*

Complications :

- *Hydrocephalus.*

5. *periventricular leukomalacia (PVL):*

- *Ischemic changes in the area of the brain supplied by branches of middle cerebral artery.*
- *Result in motor impairement " descending cortico spinal tracts" , cortical blindness , diplegic cp.*

6. *Visual Problems:-*

- *Due to :*
  - ✓ *R.O.P. (treated by laser therapy to prevent blindness) or*
  - ✓ *Peri ventricular Leukomalacia . or*
  - ✓ *Direct cortical damage.*

7. *Hearing Problems:-*
   - ✓ *Any premature less than 32 weeks must have hearing test .*
   - ✓ *Due to : Jaundice / I.V.Hge / P.V.L. / Hypoxia / Gentamycin .*
8. *Developmental Delay and learning disability :-In some Premature babies*
9. *Oesteopenia of prematurity .*

What to ask in premature :

HPI :

- *R.S :(wheezy chest)*
  - ✓ *persistent or intermittent musical sound from chest ? any days when there has not been problem? Any noisy sounds coming from wind pipe "stridor"?*
  - ✓ *Start gradual or sudden ?*
  - ✓ *Is it ass with coughs , colds? Is it productive or dry ? Anything relieve or aggravate the cough? When is more during day ….is it night or day time ?*
  - ✓ *Ass difficult of breathing ? during feed or rest?*
  - ✓ *Any change in color of lips "cyanosis"? Any episodes of stop breathing "apnea " ?*

- ✓ *Problem of O2 use : Any epistaxis , nasal discharge or obstruction?*

- *General : Is ass e fever ? poor feeding ? general fatigability?*
- *GROWTH : what about his growth ?*
  - ✓ *reduce weight ? is it significant ?*
  - ✓ *seek any medical advice …like dietien ?*
  - ✓ *what intervention ?*
  - ✓ *growth chart*

SYSTEMIC REVIEW:

- *GIT : any regurgitation of food ? any aspiration of food ? what @ appetite ? what @ bowel habits ? what colour of stool ? nausea ? vomiting ? abdominal pain? Abdominal increase in size?*
- *CVS : any increase in heart beat? Are feel cold extremity?*
- *CNS :*
  - ✓ *any abnormal movements? Any weakness in any part of the body?*
  - ✓ *Any concern regarding hearing or vision?*
- *Urinary sys : any concern regard his urination? What is colour of urine? Any discomfort at passing urine?*
- *MSS :any skin spots?*

NEONATAL HX.:

- *Details of pregnancy :*
  - ✓ *any maternal disease ? HTN , GDM , infections.*
  - ✓ *any drugs during pregnancy?*
  - ✓ *Are you received inj. Called dexamethazone ? number of courses? How much dose ?*
  - ✓ *Any f/up during pregnancy?*
  - ✓ *Is it induce or spont. Labor ? Time of membrane rupture ? reason for premature delivery ?*
- *Delivery :*
  - ✓ *gestational age ? mode of delivery ? birth weight ? apgar score?*
  - ✓ *need any intervention or resuscitation? Need intubation ?*
  - ✓ *What immediate treatment given?*
  - ✓ *Given any blood or treatment support heart and BP which called dopamine / dobutamine ?*
  - ✓ *any medicine given through breath pipe called "surfanta"? How many doses.?*
  - ✓ *What investigations done?*
  - ✓ *No one inform you any diagnosis , like HMD or MAS?*
- *After delivery :*
  - ✓ *connected to breathing machine ? for how long connect to machine ?*

- ✓ *any complications develop b/c of breathing machine , did child require chest drain b/c of air leaks in chest? , sub glottic stenosis? and how managed?*
- ✓ *Any steroids given ?*
- ✓ *any oxygen needed after that at hospital ? For how long ?*
- ✓ *Is he develop Any other problem of prematurity ? like :*
  - *Any heart problem " PDA"? use of indomethacin , ligation?*
  - *Any bleeding in water space inside the brain "IVH"?*
  - *Any concern regarding vision "ROP"? any test done?*
  - *any test done for hearing "ABR"? what was result?*
  - *Any feeding problem ? is he received TPN ? NEC?*
  - *Any yellowish discoloration ?Any infection "sepsis"?*
  - *Develop any apnea or bradycardia ?*
- ✓ *For how long stay in hospital ?*
- ✓ *What was condition upon discharge? Is he need home oxygen? You do any monitoring at home , like apnea , O2 saturation , sleep studies?*
- ✓ *any f/up arranged ? with whom - ? What intervention done ?*

NUTRITIONAL HX.:

- ✓ *Is he breast fed ? any additional formula milk? When started breast milk?*
- ✓ *Weaning : time of weaning ? is it sudden or gradual?*
- ✓ *What type of food at time of weaning?*
- ✓ *Any Feeding difficulties? Reflux symptoms?*
- ✓ *Type of feed : TPN , any additional supplements?*
- ✓ *Way of feeding : thru NGT or gastrostomy?*

PAST HX.:

- *other medical problems?*
- *No. of GP visits " out pt. clinic"?*
- *no. of hospital admissions ? details of admission*
- *any surgical interventions?*
- *hx of eczema ? food allergy ? inhalation of foreign bodies ?*

DRUG HX.: *(o2, steroids , diuretics , vit d , ca and phsophurus)*

- *current and previous?*
- *Any inhalers "ipratopium bromide" or "b2 agonist"? inhaler devices?*
- *Any allergy to any drugs?*

VACCINATION HX.:

- *is pt. receive immunization up to date ?*
- *any extra-vaccine (influenza / Pneomococcal / RSV)+ PALIVIZUMAB.*

DEVELOPMENTAL HX.: in details

- *Gross motor :*

- *when pt support his head?*
- *when pt start to rolling?*
- *when start to sitting ? standing ? walking ?*

- *Social : when start to smile ? toilet training ? dress and undress himself.?*
- *Fine motor and vision : any concern regard vision ? is he following you ? is he transfer object from side to side ? is he mouthing object ? when reaching out for object ? grasping with palmar grip*
- *Speech and hearing : any concern regard speech ? any concern regard hearing ?how many words know?*

FAMILY HX.:

- *any f.hx of similar ? any other illness?*
- *Any family hx. Of asthma , atopy?*
- *Is your husband is your relative?*
- *How many children you have?*

Risks of sudden infant death syndrome:

- *Passive smoking ? bottle feeding? Prone sleeping position? Heating in the bedroom or excessive bed clothes?*

SOCIAL HX.:

- *what is impact of the disease on pt.?*
- *what is impact of the disease on family ?*
- *personal :*
  - ✓ *education of parents ? jobs of parents ?*
  - ✓ *whose taking care of pt.?*
  - ✓ *stable marriage relation?*
- *economic :*
  - ✓ *are happy about your income ? any extra – finicial burden?*
  - ✓ *any support ? any community nurse support?*
  - ✓ *Have you car ? easy access to hospital and f/up?*
- *environment :*
  - ✓ *any one smoking ?*
  - ✓ *housing : what about floor ? is it carpet or laminated floor? Own house or rented? Any travel to new house ? any reconstruction at home?*
  - ✓ *animals: have you any animal at home?*

what is your biggest worry?

DISSCUSION

What is chronic lung disease of prematurity "BPD"?

- *Lung damage due to barotraumas resulting from artificial ventilation , oxygen toxicity and infection in the immature lungs. With radiological evidence and R.D.*
- *OXYGEN TOXICITY due to oxygen dependency either :*
  - ✓ *@ 28 days of life , or*
  - ✓ *more 36 weeks post conceptional if less than 32weeks , Or*
  - ✓ *more than 2 month …….. if more than 32weeks.*

What are grades of BPD ? according to needed respiratory support to maintained SPO $_2$ more than 89%.

- *mild BPD :infant who weaned from any supplemental O2.*
- *moderate BPD: infant continue to need up to 30% oxygen.*
- *severe BPD :infant need more than 30% oxygen*

What investigation?

- *CBC : anaemia of chronic illness.*
- *Arterial blood gas level :*
  - ❖ *respiratory acidosis -usually showing CO2 retention(ph less than 7.25.). or*
  - ❖ *metabolic alkalosis (due to chronic use of diuretics).*
- *Electrolytes abnormalities : hyponatremia , hypokalemia , or hypochloremia and hypercalcaemia (due to diuretic use) , elevate bicarbonate (due to retension of CO2).*
- *Renal function test : elevated BUN and creatinine (due to fluid restriction).*
- *Urinanylsis : presence of red blood cells (in nephrocalcinosis)*
- *Imaging :*
  - ❖ *C-X-RAY : stages :*
    - ☒ *Stage 1 : as in RDS.*
    - ☒ *Stage 2 :Diffuse haziness and lung hypoinflation.*
    - ☒ *Stage 3 : with small hyperlucent areas interspersed with Streaky densities.*
    - ☒ *Stage 4 : hyperinflation with larger hyperlucent areas interspersed with thicker , streaky densities. "cystic area"*
  - ❖ *RENAL US : to detect nephrocaicinosis when red cell appear in urine.*
  - ❖ *ECG / ECHO : indicate in non improving BPD . to detect cor-pulmonale / pulmonary HTN./ PDA*
- *Investigations to R/O dd.:*
  - ✓ *Pernasal swab for…… pertussis.*
  - ✓ *Sweat test for ……cystic fibrosis.*
  - ✓ *Bronchoscopy for…….. cong. Anomaly.*
  - ✓ *Inspiratory and expiratory x-ray. For ….FB.*

What is management? MDT*(pulmologist , cardiologist , audiologist , opthalomolgist , endocrinologist)*

1. *Minimizing respiratory support:*

- *supplement oxygen : least oxygen required should be delivered to minimize oxygen toxicity.*
  - ✓ *Home O2 : via nasal prongs (less than 2l/min) , slowly weaning over 12 weeks.*
  - ✓ *aim of oxygen b/w 94 – 98 % in awake and sleep phases.(up to 90% accepted). Increased oxygen is needed during increased activity , feeding and sleeping.*
  - ✓ *Benefits : increase weight gain , decrease pulmonary HTN ,decrease SIDS , decrease morbidity and mortality , avoids hospitalization. Prevent bronchospasm ,cor – pulmonale .*
  - ✓ *SE: ROP , BPD.*

- *Positive pressure ventilation : MV should used when clearly indicated. Nasal CPAP can be used after extubation.*

2. *Improving lung function :*

a. *Corticosteroids :*
   - ✓ *Postnatal dexamethasone : 0.25 mg/kg twice daily for 3days , then tapered.*
     - o *Benefits : reduce duration of ventilator , reduce morbidity and mortility.*
     - o *SE : increase infection , HTN , hyperglycaemia , spont. GI haemorrhage or perforation , HIB infection , increase incidence of CP.*
   - ✓ *Inhaled corticosteroids (beclomethasone) : to lessen usage of systemic dexamethasone.*
   - ✓ *Others steroids : methylprednisolone , hydrocortisone and prednisolone. (less side effects than dexamethazone).*

b. *Diuretics and fluid restriction :*
   - ✓ *short term improvements in lung functions.*
   - ✓ *Restriction fluids to 120 ml /kg / day.*
   - ✓ *Frusemide for short periods , hydrochlorothiazides and spiranolactone for longer duration.*
   - ✓ *Side effects of frusemide for longer duration include hypercalcaemia lead to renal calcification"NEPHROCALCINOSIS" , hypokalaemia , hyponatraemia , metabolic alkalosis.*

c. *Bronchodilators : can be tried but no benefits.*
   - ✓ *Ipratropium bromide - atrovent "anticholinergic agent " and b2 agonist.*
   - ✓ *Theophylline : prevention of apnea and bronchodilator.*

3. *Growth and Nutrition:*

- *Optimize nutrition to 120-150% to improve both somatic growth and lung growth.*
- *Increase calorie supplementation in formula milk by increase scoops , glucose polymers ,MCT OIL .*
- *Carbohydrate , fat , folic acid , vitamin D and iron supplements.*

4. *Immunization and RSV immune prophylaxis :*

- *Usage of I.V/IM RSV Ig . prophylaxis decrease RSV infection and subsequent hospitalization (by 50%).*
- *IM immune prophylaxis "palivizumab" a humanized RSV monoclonal antibody .Given 5 doses 15mg/kg on monthly basis on winter .*
- *For children under 2 yrs of age who still having O2.*
- *Routine vaccination should be given at correct choronlogical age.*

5. *Avoidance of tobacco smoke : may worsens lung function.*
6. *Emotional support : for parents*

How can prevent BPD?

1. *Prevention of prematurity and RDS.: by improving prenatal care and antenatal corticosteroids.*
2. *Reduce exposure to risk factors : (avoid MV)*
   - ✓ *minimizing exposure to oxygen , minimize use of excessive tidal volume .*
   - ✓ *IVF e precaution , aggressive closure of PDA.*
   - ✓ *Early surfactant replacement therapy .*
   - ✓ *Avoidance of intubation and MV , with initiation of CPAP.*
3. *Vitamin A : important in epithelial cell differentiation and repair. 5000 iu IM – 3times /week for 4 weeks.*
4. *Caffeine citrate inj. : decrease frequency of apnea and allow shorter duration of MV.*
5. *Inhaled nitric oxide : reduce pulmonary vascular tone and prevent lung inflammation , so reduce use of MV.*

What is prognosis?

- *Long term lung function is good.*
- *Most problem occur in first year. even death as result of cardio respiratory failure , sepsis , SIDS.*
- *At increase risk of neuromotor , cognitive dysfunction , hearing impairement , ROP , learning disabilities , attention deficit and behavior problems.*

Diagnostic delima

CASE: infective endocarditis

Linda is 2.5 years old girl , K/C postoperative TGA , operation done for him when was 3 days old .

GP refer linda to u b/c came recently with fever which not response to antibiotic

Take history from aysha a mother of linda , and make management plan

DIFFERENTIAL DIAGNOSIS :

- ***Infective endocarditis.***
- ***Pneumonia***
- ***Viral URTI.***
- ***UTI.***

12.General Principle:-

1/ Introduce Yourself (Hello I'm Dr. mohammed a Registrar in Pediatric working in this Hospital)

2/Check for Pt &Mother (I believe that you are Mrs. ayasha a Mother of linda)

3/Welcoming (Thank you for ur coming to discus linda's condition)

13. Chief Complaint:-

I learned from GP letter that linda is k/c of CHD which was corrected , recently came with fever , am I right ? Can you tell me more about this fever?

14. H_x of Presenting Complaint:-

- *fever : can u tell me more about this fever*
- *For how long having the fever? 3days back*
- *How mother know the fever ? by checking by ur hand or by thermometer?*
- *If check by thermometer , how much was the fever?*
- *what mother do to bring fever down (like analagsia)?*
- *anything make fever high ?*
- *is it sudden or gradual ?*
- *is it continues for whole the day or on/off? Is it more during day or night?*
- *Is it ass with sweating? Or ass e shivering ?*
- ***MSS** : Is it ass e skin spots? Is it ass with joint pain ?*

- *What is associated symptoms along with the fever ?*
- ***CNS** (Complications of endocaditis) :*
  - *Is it ass e abnormal movement (shaky or jerky movement)?*
  - *Any weakness in his body ?*

- *Any episodes of falling down?*
- *Any episodes of loss consciousness?*

- ***CVS /RS** :*
    - *Is it ass with increase in heart beat?*
    - *Is it ass with difficult breathing ?*
    - *Any change of his lips colour?*

    - *Is it ass with cough?*
    - *Is it associated with recurrent chest infection ?*
    - *Is it associated with any flow or running nose?*
- ***General** :*
    - *What about his appetite?*
    - *Is he sweating during feed?*
    - *Is his sleep affected?*
    - *What about his activity?*
    - *Any concern regard her weight?*

- ***GIT**:*
    - *Appetite ?*
    - *What about his bowel habit?*
    - *Any episodes of throwing up?*
    - *Any increase in tummy size ?*

- ***Urinary symptoms** :*
    - *Any concern regarding his urination?*
    - *What about amount of urine?*
    - *What about colour of the urine?*
    - *What about odour of urine?*

15. *<u>Nutritional and growth H_X:-</u>*
- *Any concern regarding her feeding?*
- *What type of food ?*
- *How many meal per day?*
- *Any f/up with dietien ?*
- *Any allergy to any food?*
- *Do u have any concern regarding his growth ?*

16. ***<u>past history</u>** : I came to know that linda having heart defect when she was 3days old , am I right ? can u tell me more about this ?*
- *When was diagnosed ?*
- *How she was present at that time ?*

- *Where diagnosed and by whom??*
- *Does she required admission ? where admitted ?*
- *What investigation done for her?*
- *What treatment given?*
- *Does she require any type of surgery ? where they open for operation is it median sternotomy or lateral thoraxotomy scar ?*
- *After how many days discharge ? what was her condition on discharge?*
- *Does she having any f/up?*
- *does she have any other illness? Any history of dental extraction? Any history of similar condition?*
- *Does she had any more hospitalization?*

17. *Drug HX :- (M. A. C.):*

- *Is he in any medicine currently or in the past? ACEI , diuritics*
- *What is that ? when described ?*
- *Any sensitivity to any medicine ?*

18. *PeriNatal H_X. :-*

Prenatal Hx

- *Did u have any infection during ur pregnancy.?*
- *Did u receive any drug during ur pregnancy?*
- *Are u have good antenatal f/up?*
- *Any imaging done for you ?*

Natal Hx:

- *Are u having any concern regarding her delivery?*

Post natal H_X :- or

- *Any concern after delivery?*

19. *Immunization H_X:-*

- *Any concern regard vaccination (are they up-to-date)?*
- *Any extra vaccine ?*

20. *Developmental H_X :-*

- *Do you have any concern about his development (like his pears)? I mean*
    - *When start walking?*
    - *Is his vision is normal?*
    - *Is he speaking to you?*
    - *Is he playfull?*

21. Family H_X :-

- *Any medical problem in the family?*
- *Any sudden death in the family?*
- *Is the husband is ur relative?*
- *How many children u have?*

22. Social H_X :-

- *impaction of the disease on her :*
    - *Is it affect her growth ?*
    - *Is it affect her development?*
    - *If in school is she missed school ?*
    - *Is it affect her school performance ?*
    - *Is it restrict her sports in school ? or is it affect her activity or playing ?*
    - *How teachers deal with her illness?*
    - *How their peers' attitude with her? Any teasing to her ?*

- *Impaction of the disease on family (parents and siblings)*
    - *What is the Job of u? and ur husband ?*
    - *Is the income satisfy ur needs ?*
    - *Any other financial support ?*
    - ***Is the disease made extra financial burden?***
    - *Whose taking care of her?*
    - ***Is the disease restrict ur social life ?***
    - *Is ur marriage life is stable ?*
    - *Any plan for further children ?*
    - *U did genetic counseling ? or are you aware of risk recurrence?*
    - *Is it affect sibling rivalry?*
- *Acess to local doctor :*
    - *Are U have ur own car ?*
    - *If u need u can easily reach local doctor ?*
- *Coping of the family with the disease:*
    - *U know what u will do if she develop cyanosis or febrile illness?*
    - *Are u aware of dental hygiene?*
    - *Are u aware about antibiotics prophylaxis for operation and dental procedures?*

- *Environmental H_X :-*
    - *Any one at home Smoking ?.*
    - *Housing :*
        - *is ur home rented or ur own home?*
        - *Is the home with the good Ventilation?*
        - *How many Bed rooms?*
    - *Animals : have u any animal in the house?*

- *What is your Biggest Concerns ?*
- *Do you feel there is an agenda we didn't cover today?*
- *Summarizing the HX . THEN --→ thank the mother*

Discussion

What is dd?

- *Infective endocarditis*
- *Pneumonia*
- *Viral urti*
- *UTI.*

How you diagnosed endocarditis?

Modified Duke criteria:

A diagnosis of infective endocarditis is definite if either the following pathological or clinical criteria are met:

1. *One of these pathological criteria:*
    - *Histology or culture of vegetation finds microorganisms*
    - *Active endocarditis*
2. *One of these combinations of clinical criteria*
    - *2 major clinical criteria*
    - *1 major and 3 minor criteria*
    - *5 minor criteria*

Diagnosis of infective endocarditis is possible if one of the following combinations of clinical criteria are met:

- *1 major and 1 minor criteria*
- *3 minor criteria are fulfilled*

Major criteria:

1. *More than 2 Positive blood culture with typical infective endocarditis microorganism*
2. *Evidence of endocardial involvement with positive echocardiogram defined as :*
    - *Abscess, or*
    - *New partial dehiscence of prosthetic valve or new valvular regurgitation (worsening or changing of preexisting murmur not sufficient)*

Minor criteria:

1. *Predisposing factor: known cardiac lesion, recreational drug injection.*
2. *Fever >38 °C*
3. *Embolism evidence: arterial emboli, pulmonary infarcts, Janeway lesions , conjunctival hemorrhage*
4. *Immunological problems: glomerulonephritis , Osler's nodes , Roth's spots,Rheumatoid factor*
5. *Microbiologic evidence: Positive blood culture (that doesn't meet a major criterion) or serologic evidence of infection with organism consistent with IE but not satisfying major criterion*

What investigation?

- *CBC*
- *CRP./ESR/ASOT*
- *URINE for blood.*
- *Blood c/s : 6 blood c/s from different sites at different times over 2days.*
- *C- X-ray .*
- *ECG :*
- *ECHO (transthorasic): for vegetation.*
- *Consider ventilation – perfusion scan , white cell diff.*

What is treatment for infective endocarditis ?

- *I.V antibiotics :Treatment for 6 weeks , according to causative organism :*
    - *Streptococcus viridians ……..pencillin + gentamycin.*
    - *Staphylococcal(auerus and epidermis) ……..flucloxacillin + gentamycin.*
    - *Strept faecalis ……..amoxicillin + gentamycin.*
    - *Candida infection (- ve blood c/s)……amphotericin +flucytosine*
- *Surgical exploration in case of :*
    - *Failure of medical treatment.*

- *Prosthetic valve*
- *Patch, homograft*
- *Pacemaker.*

What is preventive measures ?

- *Aware ness of the disease and how to do if any problem occur.*
- *Good oral hygiene*
- *High caloric diet .*
- *Prophylaxisis ABS. in :*
  - ✓ *Dental extraction.*
  - ✓ *Tonsillectomy*
  - ✓ *Appendicectomy*
  - ✓ *Bronchoscopy*
  - ✓ *Endotracheal intubation*
  - ✓ *Urethral catheterization.*

What are complications of infective endocarditis ?

- *CVA*
- *Brain abscess*

Case 2 : fever for 5days with murmur , adam done for him operation at age of 2month and other operation at age of 11 month.take hx. Of ehassan mother of adam.

I.B.D…..crohn's (Relapsed case)

DD: of k/c of crohn's present with diarrhea:

- *Relapse (nature of the disease).*
- *Non compliance either to diet or drugs.*
- *Ulcerative colitis.*
- *Other causes of diarrhea : infective .*

Intestinal manifestations of the disease:

- *Apthous ulcers*
- *Abdominal pain*
- *Primary sclerosing cholongitis.*
- *RT. Iliac fossa mass /pain.*
- *Diarrhea , blood , mucus.*

Extra intestinal manifestations of disease :

- *Arthritis / arthralgia.*
- *Eye : uveitis , episcleritis , conjunctivitis , pallor , jaundice.*
- *Skin : erythema nodosum , pyoderma gangerousum*
- *Renal stone.*
- *Fever , sweats.*

What to ask:-

HPI :Current Symptoms.

- *GIT :*
  - ✓ *stool duration and frequency /amount / consistency*
  - ✓ *what is colour ? / contain Blood & Mucous / odour?*
  - ✓ *is it difficult to flush?*
  - ✓ *Aggravating or relieving factors?*
  - ✓ *Association of diarrhea with :*
    - *Esp. type of food like milk or wheat?*
    - *MSS : Skin changes or Joint pain*
    - *Mouth ulcer*
    - *Lesions or swelling in private area?*
- ✓ *Ass with tummy pain ? in detail if main complain.*
- ✓ *Ass with increase in tummy size?*
- ✓ *Any episode of constipation ?*
- ✓ *Ass with loss of appetite.*
- ✓ *Ass with vomiting*
- ✓ *Ass e fever , reduce activity , disturb sleep?*

growth hx. And nutritional hx.:

- *Evidence of weight loss ? is it significant loss of weight ?*
- *You come to know this loss of weight is measuring or by estimation?*
- *You seek any medical advice for this? Any dietien help ?*
- *What intervention done ? what is benefit from intervention?*
- *Any esp. type of food prescribe ?*
- *route of administration ? any feeding throu NGT ?*
- *Have you any growth chart for this ?*
- *what about pubertal status "often delay"?*

Nutritional hx. :

- *Bottle fed or breast feeding ? at which age you introduce soild food?*

systemic review : extra intestinal manifestations of crohn's

- *CVS /R.S :*
- *CNS: any concern regarding vision (uvities related to crohn's)*
- *URINARY: any concern regarding urination ? ..renal stone complication of crohn's.*

Menstrual hx. (if female).

Delayed Puberty (Nutrition / Inflammation / Endocrinopathy / Steroids)

PAST HX. : if diagnosed crohn's

- *No one give any diagnosis ?*
- *When / How / Diagnosed.*
- *How many relapses Pt has ?*
- *Recents levels of inflammatory markers , hb and albumin?*
- *Any regular f/up ? with whom " dietien " ?*

DRUG HX .:

- *Previous & Current ttt . (dietry – medical)*
- *Complications of treatment*
- *How often you give ? you regularly take ?*
- *Who give ? and through which route? Any rectal treatment ?*
- *Any surgical operation done ?*

Perinatal hx.

Immunization hx.: what about immunization , is he receive uptodate ?

Allergic hx

Family hx.:

- *Similar condition*
- *Fhx. Of DM , IBD , thyroid disease*
- *Is your husband is your relative ? is it 1^{st} , 2^{nd} degree ?*
- *How many children ? all are ok and well ?*

Social hx.

- *Environment : smoking (related to crohn's).*
- *Disease Impaction in School :*
- *Disease impaction on Family :*

discussion

Problem list in crohn's : must stress in hx.

- *Chronic diarrhea*
- *Weight loss*
- *Bulling school and missing of school.*
- *Non compliance to treatment.*

What difference b/w chronic diarrhea and persistant diarrhea?

- *Chronic diarrhea : is loose motion for more than 2weeks. 3 times /day.*
- *Persistant diarrhea : continous diarrhea for 2weeks daily without gap in between.*

What are the differences b/w crohn's and ulcerative colitis :

Ulcerative colitis	*Crohn's*
- *Continous inflammation of mucosal / submucosal.*	- *Skip lesions – transmural.*
- *No granuloma*	- *Granuloma present.*
- *Colon and rectum more involve.*	- *Terminal ilum more*
- *Clinically : bloody diarrhea*	- *Clinically : mouth ulcer, perianal tag*
- *Crypt abscess common*	- *Abscess less common.*
- *Pyoderma gangerousm*	- *Erythema nodusm.*

Investigations:-

1. *blood test :*

❖ *assess increase disease activity by :*

- *CBC and inflammatory markers : low Hb and Increase in (CRP) , (ESR) , and WBC.*
- *Liver function : Low albumin (liver function tests).*

❖ *Vit b12 , iron studies , and folate.*

❖ *Serological study :*

- *Perinuclear antineutrophil cytoplasmic abs.*

2. *Stool :*

- *culture (Infectious diarrhea) /stool (for Clostridium difficile toxins)*
- *Fecal calprotectin level.*

3. *imaging studies :*

- *X-ray of wrist for bone age.*
- *X-ray of abdomen for : obstruction , dilation and thickening.*
- *Abdominal u/s : bowel obstruction , for abscess and fistula and renal stone.*
- *MRI / CT abd. And pelvic .*
- *Barium follow through Radiology.*

4. *endoscopic :*

- *Upper & Lower GI Endoscopy with multiple biopsies + Histopathology.*
- *Histological appearance : skip ulcer and cobblestone appearance.*

Management:-

1. *Medical treatment :*

☒ *Induction of Remission at diagnosis or disease relapse:-*

a)1st line : Exclusive Enteral Nutrition :

- ✓ *polymeric (Alicalm 2) or elemental (protein broken down in peptide)*
- ✓ *for 8 weeks*
- ✓ *80% remission.*

b) 2nd line :

- *Prednisolone : oral or iv ,1-2 mg per/kg/d (for 2-4 week)*

c) 3rd line :

- *Refractory or non-responsive (ttt by Immuno-Modulators)*
  Azathioprine → 6-mercaptopurine → Methotrexate
- *Infliximab (anti – TNF A antibody).*

☒ *Maintenance of remission:-*

- *Step I :*
  - ✓ *5 amino salicylates acid (sulfasalazine).*
  - ✓ *Antibiotics effective more in crohn's .*
- *Step ii : Immunomodulator :*
  - ✓ *Azathioprine or 6-mercaptopurine →*
  - ✓ *Methotrexate.*
- *Step iii :*
  - ✓ *Infliximab.*
  - ✓ *monoclonal antibody.*

2. *Surgical treatment for : indication of surgery :*
   - ✓ *fistulae*
   - ✓ *failed Medical ttt .*
   - ✓ *fulminant colitis*
   - ✓ *Toxic Mega-colon .*
   - ✓ *bowel stricture.*
3. *Management of complications :*

- *Toxic mega colon (colonic dilatation more than 6cm)*
- *Abscesses : ciprofloxacin + metranadzole.*
- *Fistula.*
- *Stone renal*

UTI(PUV)

CASE:

Abdallah is 9month old boy , came e high grade fever for 3days , refusal of feeding and constipation. Abdallah was admitted 3 month back and diagnose with UTI.

Take history of hana amother of abdallah

DIFFERENTIAL DIAGNOSIS :

- ***UTI***
- ***Meningitis***
- ***URTI/OM.***

What to ask in UTI :

- ***Anylasis of HPI and systemic review :***
  - ***Anylasis of fever:***
  - ***Urinary symptoms :***
    - ✓ ***buring micturation , frequency ,odour , colour of urine ?***
    - ✓ ***flow of the urine (puv).***
  - ***CNS : abnormal movement?***
  - ***GIT : constipation (risk factor) , vomiting , abdominal pain.?***
  - ***RS and CVS:***
- ***Nutritional hx : refusal of feeding.***
- ***Past Hx :***
  - ***Similar condition***
  - ***Hx of defect in the back (spina bifida)***
  - ***Circumcision (risk factor)***
- ***Perinatal history :***
  - ***Antenatal f/up (e.g hydronephrosis , oligohydroaminos)***
  - ***Complication of delivery and after delivery***
- ***Family history : of similar condition , renal disease , HTN.?***
- ***Social history : smoking is important.***

General Principle:-

1/ Introduce Yourself (Hello I'm Dr. mohammed a pediaric Registrar working in this Hospital)

2/Check for Pt &Mother (I believe that you are Mrs. Hana a Mother of abdallah)

3/Welcoming (Thank you for ur coming to discus abdallah's condition)

Chief Complaint:-

Can you tell me What is main problem of abdalla?

Mother : fever for 3days – constipation – refusal of feeding

Hx of Presenting Complaint:-

1/fever : can u tell me more about this fever

- *For how long having the fever?*
- *How mother know the fever ?*
- *how much (high or low grade)?*
- *what mother do to bring fever down?*
- *anything make it high ?*
- *is it sudden or gradual ?*
- *is it continues for whole the day or in between is less ?*
- *Is it associated with rigors ? or sweating ?*
- *Is his activity or playing is affected?*
- *MSS : Is the fever associated with skin spot ? joint pain ?*
- *Is his sleep affected during this illness?*

- *Associated symptoms with fever :*
  - *CNS (convulsion /meningitis)*
  - *Is it associated with abnormal movement during fever? Or his body become more stiff or weak.? …..convulsion.*
  - *Are u notice any changes in his eyes As if he was looking upward constantly?*
  - *Or his face/ mouth turn black color ? or sputum came from corner of the mouth?.....convulsion.*
  - *Does he had unusual crying as if something hurt him? Or he was even not able to cry as before due to fever and less activity?.....meningitis.*
  - *Any episode of loss of consciousness?*
  - *Any concern regarding vision or hearing?*

  - *Urinary symptoms :*
  - *Is he crying when passed urine?*
  - *How many time per day u change diaper for urine?*
  - *Any change in urine colour or odur?*
  - *Are u notice any increase in size of his abdomen ?*
  - ***U notice any change in the flow of urine? Only clue to PUV.***

  - *R.S and ENT:*
    - *did he develop any cough? Or difficult of breathing.?*
    - *Did he had any discharge from ear?*

  - *CVS:*
    - *did u feel swelling in his face or feet? Or aware of his heart beat ?*

2/ refusal of feeding (nutritional Hx) : I came to know that he didn't feed well as before can u tell me more @ feeding:

- *since when feeding is reduce ?*
- *Is he in breast feeding or formula ?*
- *If formula how to make and dilute ? how many time per day?*
- *Time of weaning and time of introduction of solid food?*
- *What type of food took now days ? how many time /day ?*

3/constipation(analysis of GIT) : I know also his bowel not passing frequently ,can u tell me :

- *Why u told constipation ? When started?*
- *Frequency of passing stool? Consistency of stool ?*
- *Is defecation painfull +/- is he passed blood around the stool(fissure)?*
- *Anything help him ?*
- *What intervention done by the mother? What response of treatment?*
- *Is he took food containing enough fiber ? is he drink good amount of fluid?*
- *Is it ass with abdominal pain ?*
- *Is he feel sick ? is he thrown up?*

4/ past history of UTI : abdalla before 3month get bugs in his urine, am I right ? can u tell me :

- *When diagnosed ?*
- *What features he had that time?*
- *Where diagnosed and by whom??*
- *Does he require hospitalization? To ward or ICU?*
- *How diagnosed (What test done , any scan or procedure done for him)?*
- *Do u have an idea about bug caused his infection?*
- *What medication given? How respond to treatment?*
- *Does he require any type of surgery ?* ***Does he had any defect after birth like hole in his back(spina pifida) require surgery****?*
- ***Did he had any abnormalities in his gentelia that making passing urine is difficult ?***
- *does abdallah had* ***circumcision****? If yes when ? if not why (may be delayed b/c of defect or other concern or family habit)?*
- *Any f/up after that?*

<u>Perinatal Hx. :-</u>

- *Are u have good antenatal f/up?*
- *Any scan during pregnancy? Does it reveal any abnormalities ?*
    - *Like amount of fluid around the baby in the mother (oligohydraminos) (are u feel ur abd is small during pregnancy comparing with previous pregnancy)?*
    - *kidney problem in the baby (hydronephrosis) ?*

- *If yes what action done before or after delivery? And whether they repeated scan after birth?*
- *Any treatment given short or long course*

Natal H_X :- (G.W.D.)

- *What was Gestational Age?*
- *What was the Wt at birth.?*
- *What is mode of Delivery ?*

Post natal H_X :-(C. H. N.)

- *Any problem(RD due to lung hypoplasia) after delivery? Need NICU admission?*

- *During 1st month of life Does he admitted to hospital for any cause? Like get infection or become yellowish? – clue of UTI during neonatal period*
- *Any other history for hospitalization ?*
- *Any other illness ?*

Drug HX :- (M. A. C.):

- *Is he in any medicine currently or in the past?*
- *What is that ? when described ? side effects?*
- *Any sensitivity to any medicine ?*

Immunization H_X:-

- *What about his Vaccination (is it up-to-date)?*
- *Did he take extra vaccine (BCG /Influenza / P.C.V.)?*

Developmental H_X :-

- *Do you have any concern about his development (like his peers)?*
- *Do u have any concern regarding his growth ? is he increasing in his weight or u notice that is not like other same age and sex*

Family H_X :-(D. D. C. T.)

- *Have any similar problem in the family?*
- *Any kidney disease as urine can return up instead going down known as "reflux"?*
- *any FH of HTN.*
- *Any other medical problem in the family?*
- *Is your husband is your relative ? what degree ?*
- *How many children u have?*

Social H_X :-(P. E. E.)

Personal H_X:-

- *What is the Job of Parents?*
- *Who is taking care Of abdalla?*

Economic H_X :-

- *Is the Income satisfy family needs?*
- *Any other Financial support (Governmental / Agencies / Friends)?*
- *How can Transporting Pt for his F/Up ?*

Environmental H_X :-

- *Smoking / Alcohol Consumption /Drugs.*
- *Housing (rented/ Ventilation/ Bed rooms/ Pt has his own room/ NO of people in room)*
- *Animals (Pets in the house)*

- *What is Impaction of the disease on the family?*

- *What is impaction of the disease on abdalla?*
- *What is your Biggest Concerns ?*

- *Do you feel there is an agenda we didn't cover today?*

- *Summarizing the HX . THEN → thank the mother*

Discussion

(revised protocol of UTI Management)

What is dd? On basis of history dd is

- ***UTI-PUV (b/c of poor flow).***
- ***Meningitis***
- ***URTI***

What is causative organism of UTI and effective abs?

- ***E.coli……trimethoprim-sulfamethoxazole***
- ***Klebsiella (common in more than 10yrs old)…….nitrofurantoin***
- ***Proteus***
- ***Streptococcus fecalis.***
- ***Staphylococcus saprophyticus***
- ***Pseudomonas aurgonisa(less than 9yrs)……aminoglycoside.***

What you mean by the following definitions?

- ***Simple UTI : responed within 48 hrs.***
- ***Atypical UTI :***
  - *Not responed to ttt within 48 hours*
  - *Non-e coli infection*
  - *Poor urine flow.*
  - *Seriously ill/raised creatinine.*
- ***Recurrent UTI:***
  - *2 or more episodes of uti with acute pyelonephritis(upper uti)*
  - *One episode of pyelonephritis + one episode of cystitis (lower uti)*
  - *3 episodes of cystitis (lower uti)*
- ***Late US :*** *within 6 weeks*
- ***Late DMSA:*** *6 month or more following infection.*
- ***MCUG :*** *6 weeks after infection*

What investigation?

Abdallah need more investigation b/c he is under category of recurrent UTI.

- ***CBC***
- ***RFT / SE***
- ***BLOOD CULTURE***
- ***Urine :***
  - ***Dipstick test*** *for leukocytes esterase(LE) and nitrates (N) (older than 3 yrs)*
    - ✓ *LE(+ve)/ N (+ve).....(confirm UTI) start antibiotic for uti*
    - ✓ *LE (-ve) /N (+ve) ……(probable UTI)start abs and send c/s.*
    - ✓ *LE(+ve)/N(-ve)…….(-/+UTI)send urine for microscopy and c/s , start abs according to clinical condition.*
    - ✓ *LE(-ve)/N (-ve)…….(no UTI)don't send urine for c/s or start abs.*
  - ***Culture of the urine*** *if (<3yr , atypical or recurrent uti , and +ve LE/N).*
  - ***Microscopy of fresh sample*** *if (<3yr e fever / >3yr e fever and seriously ill , or +ve LE/N)*
    - ✓ *Bacteria + leukocyte ……UTI.*

- ✓ *Bacteria only …..UTI or contaminant.*
- ✓ *Leukocytes only ….treat if symptomatic.*
- ✓ *No bacteria or leukocytes …..no UTI.*
- ✓ *Organism count > 10×5/ml……UTI.*
- ✓ *Pyuria (normal < 10× 10 ×6/l)…viruses can cause sterile pyuria.*

- ***Abdominal US: for detecting structural abnormality.***
  - *Immediate US (during acute infection) indicated in :*
    - ✓ *recurrent UTI(only if < 6moth) or*
    - ✓ *atypical UTI (all ages)*
  - *Late US (within 6 weeks) in:*
    - ✓ *simple UTI (if < 6m).*
    - ✓ *recurrent UTI (if > 6month).*
- ***MCUG** (6 weeks after infection) **assess VUR.***
  - *In recurrent UTI and atypical UTI (if less than 6month)*
  - *In recurrent UTI and atypical UTI (6 m – 3yrs) if :*
    poor urine flow , non- e.coli , FHx of VUR , diltation on US.
  - *need prophalactic abs.*
- ***Late DMSA scan** to R/O scar to prevent HTN (after 6 month) indicated in :*
  - *Recurrent UTI (all age group)*
  - *Severe or atypical UTI (if < 3yrs)*
- ***Abd. X-ray for constipation and for proteus stones.***
- ***N.B : U/S in antenatal period for mother : to detect oligohydroaminos in mother , and hydroureter , hydronephrosis in fetus***

What are methods of collecting urine ?

- *Clean catch in sterile container for non- cooperative.*
- *Collect mid stream urine for cooperative children.*
- *Pad urine specimen(for dipstick urine).*
- *Suprapubic aspiration for urgent specimens in ill pt or if there is diagnostic uncertainty.*

What is your provisional diagnosis?

- *Abdalla most likely had UTI due to PUV aggravating by constipation , which necessitate management also , plus circumcised or not or other anomalies*

What is your treatment plan?

- *Admission*
- *Send investigations (mentioned up).*
- *Good hydration with IVF*
- *Analgesia*
- *If electrolytes disturabance ….corrected.*
- *antibiotics :(for 10-14 days)*
  start IV for 2-4 days if (not tolerate oral or severe ill or young infant) and If clinical improve discharge on oral antibiotics till complete 14 days.

  - *Pyelonephritis (systemic illness) :*

- ✓ *IV cefotaxime (<3m) ,or coamoxiclav (>3m)., or aminoglycosides.*
- *Cystitis : oral cefalexin for 3days or Trimethoprim /nitrofurantoin*

- *Treatment of the cause:*
  - *Drainage for obstructed kidneys.*
  - *Stone removal*
  - *Augmented bladder may improve with with mucolytic and bacteriostatic washouts (parvolex washouts).*
- *Surgical treatment*
  - *ENDOSCOPIC ABLATION IN PUV*
  - *Antireflux surgery for Obstructive mega ureter with reflux.*
  - *Antireflux surgery for Failure of medical ttt in grade 3+.*
  - *All neuropathic bladder.*
- *Circumcision : for recurrent UTI in structurally abnormal urinary tract.*

PREVENTION OF UTI :

- *Avoidance of constipation , correct bottom wiping*
- *Frequent voiding and high fluid intake*
- *Lactobacilli in yoghurt , cranberry juice.*
- *Clean intermittent catheterization.*
- *Prophylactic antibiotic.*

What is indication of prophylactic antibiotic?
Trimethoprim-sulfamethoxazole and nitrofurantoin.

- *Grade 3+ reflux till 2 yrs of age.*
- *Urinary tract obstruction (e.g : PUV)pending surgery.*
- *Frequent sympotomatic infections more than 3/yr.*

PUV:

What is posterior uretheral valve ?

- *mucosal folds in posterior urethra of male infants leading to dilatation of renal tract proximal to obstruction*
- *Diagnosed by :*
  - *Abdominal US show bilateral hydronephrosis , thickened bladder wall.*
  - *MCUG show dilated urethra proximal to valve and narrow urethra distally*
- *Manage by : MDT (PULMONLOGIST –NEONATOLOGIST- UROLOGIST –RADIOLOGIST)*
  - *Endoscopic fulguration (transuretheral ablation by diathermy cystoscopicaly) .*
    Or
  - *vesicostomy (low diversion) followed later by ablation.*
    Or
  - *Pyelostomy (high diversion) followed by ablation*
  - *Antibiotic (co-trimaxzole) prophylaxis before and after ablation.*
  - *Fetal surgery in case of severe oligohydramnios*
- *What complication of posterior uretheral valve?*
  - *Incontinence*
  - *Recurrent UTI.*

- *VUR*
- *HTN*
- *End- stage renal failure*
- *FTT*

what is criteria for admission ?

What criteria for discharge ?

- *Symptoms mild or free*
- *Tolerate oral abs.*
- *Avoid risk factor : constipation , low fluid intake , infrequent bladder emptying , poor perineal hygiene.*

What is the subsequent management and f/up?

- *Late us , DMSA , MCUG according to age and type of infection.*
- *Prophylactic antibiotic : age >3m .. nitrofurantoin 1 mg / kg*
- *f/up of growth , BP , renal function , renal u/s , urine analysis.*
- *f/up in case of renal scar.*

How you manage pt with renal scar ?

- *Establish whethere having VUR or not.*
- *Prevent UTI by prophylaxis*
- *Consider surgical in case failure of medical treatment , non compliance.*
- *Annual BP measurement.*
- *Urinary protein excretion and renal function every 3-4yr.*

What is social problem in case of PUV ?

- *Urine incontince*

VUR :

STAGING OF VUR

- *Stage 1 : reflux into ureter.*
- *Stage 2: reflux into ureter , pelvis and calyces with no diltation.*
- *Stage 3 : mild – moderate diltation , no blunting of fornices.*
- *Stage 4: moderate dilation + obliteration of sharp angle of fornices.*
- *Stage 5: gross dilatation and tortuosity , no papillary impression.*

Management of VUR :

1. *Medical treatment : for stage 1 , 2 to prevent recurrent UTI and scaring*
   - *prophylactic antibiotics cefalcor , cefalexin , trimethoprim , or nitrofurantoin*
2. *Surgical treatment : for stage 3, 4*
   - *Endoscopic suburetric injection (sting)*
   - *reimplantation*

Recurrent episodes of loss of consciousness(SYNCOPE)

Case (circuit page 183): loss of consciousness

- *5yrs old boy , refered to u to see in OPD with episodes of loss of consciousness. He has develop these episodes over preceeding 4 months , and has been seen in the local emergency department after one episode of loss of consciousness. 12 lead ecg , BP , FBC , RBS , U/E at this time were normal. He was NVD , term , developmentally normal. Elder sister having febrile seizure at 3 yrs of age.*
- *He has recently moved to new school and his parents feel he has settle in well. I wonder if he may have seizure disorder or cardiac arrythymia.*

DD of loss of consciousness: (usually benign)

1. *Neurological :*
   - *Seizure disorder*
   - *Brain tumor.*
   - *Cerbro -vascular accident*
   - *Reflex anoxic seizure*
2. *Cardiovascular :*
   - *SVT , VT .*
   - *long Q-T. :*
     - *primary : Romano – ward and jervell and lange- Nielsen(ass deafness)*
     - *2ry : myocarditis , electrolytes and medication.*
   - *WPW syndrome.*
   - *AV conduction defect.(HEART BLOCK)*
   - *Cardiomyopathy*
   - *Shock , including anaphylaxis*
   - *Left ventricular outflow obstruction – Aortic Stenosis.*
   - *Cong. H.D. (TOF).*
   - *Pulm. Hypertension.*
3. *Others :*
   - *Vasovagal episodes (neurocardiogenic) …common and benign.*
   - *Behavioural : hysteria.(diagnosis of exclusion).no prodromal symptoms.*
   - *Hyperventilation : preceding psychologic distress , sensation of SOB , chest pain and numbness and tingling of the extremity.*
   - *Postural hypotension , hypovolemia.*
   - *Respiratory : decrease venous return*
     - ✓ *Breath holding attack (younger than 6yrs).*
   - *Metabolic : Hypoglycaemia.*
   - *Drug induce : Inhaled nitrites., Anti hypertensive agents and diuretics. Tricyclic antidepressant.*

What are red flag features in syncope?

- *After excrecise .*

- *Chest pain*
- *Palpitation*
- *Hx. Of heart disease.*
- *In recumbent position.(seizure disorder).*
- *Fhx. Of unexplained death., HOCM , long QT .*

What to ask in syncope "loss of consciousness":

Introduction :

- *What is your concern ? loss of consciousness.*

Hpi – anylasis of episode:

- *When first one happen i.e for how long ?*
- *How often occur.? Recurrent ---vasovagal.*
- *During events : Prescribe for me the event ? Do you have any video record for this attack :*
  - *uproling of eye weakness , tongue bitting or incontinence ……fits*
  - *Where were you when it started ?*
  - *duration of event ? few seconds …..vasovagal*
  - *Where happen (at home , KG ,…)*
  - *What was the first thing you noticed? Any changes in his colour "palor or cyanosis " ?*
- *After event:*
  - *(What happened next)?*
  - *How recover from attack ?*
- *Any relieving or aggravating factors?*
- ***Before event :***
  - *What was he doing beforehand?*
    - ✓ *Exercise ……cardiac.*
    - ✓ *Recumbent …..seizure*
  - *What symptoms before events ?*
    - ✓ *Is Dizziness , pallor , nausea , hyperventilation, tinnitus , light headed…… (vasovagal)*
    - ✓ *Do you notice these attack preceded or precipitated by unpleasant sense (anger , pain , cry , fear) ….reflex anoxic , breath holding attack.*
- *Associated symptoms. :*
  - *CVS / RS :*
    - ✓ *ass. chest pain , palpitation ……cardiac .*
    - ✓ *difficult of breathing ? any cough ? any change in his colour of lips "cyanosis"?*
    - ✓ *Ass with standing after prolong bed rest……..postural hypotension.*
  - *CNS :*
    - ✓ *Ass with abnormal movements ,*
    - ✓ *Any concern regarding , vision , hearing or speech …….*

- ✓ *Ass e headache ……Tumor*

- *GENERAL :*
  - ✓ *Ass e prolong fasting …….vasovagal*
  - ✓ *Any recent weight loss , fever or night sweat ..... space occupying lesion*

Systemic review :

- *Git : is having loss of appetite ? is these attack related to meals ?*
  - *any regurgition or vomiting ? any vomiting of blood ?*
  - *is his stool contain blood or become black " ch. Blood loss – anaemia.*
- *Urinary : urine colour , frequency , amount ?*
- *MSS : any skin discoloration or skin rash ? is having any joint pain or swelling ?*

Past hx.:

- *h/o similar condition?*
- *h/o of other medical problems?*
- *h/o trauma ?*
- *Hospital admission ? and why ?*
- *Surgical operation?*

Drug hx.:

- *any ingestion of medications?*
- *Any member of the family using antihypertensive or tricyclic antidepressant?*

Perinatal hx.:

- *any concern during pregnancy ?*
- *or during delivery ? mode of delivery*
- *or after delivery ? is having any problem in the neonatal period , need any admission in NICU.*

Immunization hx.: any concern regarding his vaccination.

- *Is he receive vaccine update?*
- *Any extravaccine ?*

Developmental hx.: any concern regarding his development ? is he develop like his peers :

- *Gross motor : is he walk , jump , run ?*
- *Fine motor : can he hold the pen , can draw ?*
- *Social : dress / undress himself.*
- *Speech : how many wards he know ?*

Nutritional and growth : any concern regarding his growth ?

- *How many meal / day?*
- *His weight and length?*

- *Have any growth chart? In which centile ?*

Family hx.: any family h/o of significant?

- *Fx. Of sudden death , SIDS , CHD , deafness , seizure and metabolic disease.*
- *Consuganity of father and mother ?.....METABOLIC*
- *No. of family members , any problems regarding their health?*

Social hx.:

- *what is affect of disease on the family?*
    - *Is both parent working ? income satisfy – who take care of child?*
    - *Who support the family? Having health insurance*
- *Effect on schooling? Absence , performance , his relation with peers and sibling.*
- *any changes in his behavior or personality ?*
- *any new event in his life moving to new house , or kinder garden , birth of new sibling or loss of relative .*

Discussion

What is vasovagal syncope?

- *Is temporary loss of consciousness and tone that occurs as result of inadequate cerebral perfusion.*
- *Vasovagal syncope occurs in response to a trigger, with a corresponding malfunction in the parts of the nervous system that regulate heart rate and blood pressure. When heart rate slows, blood pressure drops, and the resulting lack of blood to the brain causes fainting and confusion.*

How to differentiate b/w seizure and syncope ? in vasovagal attack.:

- *Post ictal phase rigid posture., no incontinence.*
- *Pre syncopal symptoms .(sense that is about to pass out without loss of consciousness) …pallor , dizzeness , nausea , sweating.*
- *Loss of consciousness is less than 1 min.*

What are predispose factors to syncope (vasovagal attack) ?

- *Warm environment .*
- *Crowded space.*
- *Anxiety or sudden surprise*
- *Fright , blood drawing or sight of blood*
- *Prolong and motionless standing or upright sitting.*
- *Lack of sleep Dehydration , Hunger*
- *Any painful or unpleasant stimuli, such trauma.*

- *Severe menstrual cramps*

What is your management plan :

A. *Admission. Full examination.*
B. *Investigations:*

1. *CBC , Blood glucose , CA and Mg.*
2. *urea and electrolytes , LFT ,*
3. *Checking BP in supine and after standing for 5-10 min.(r/o postural hypotension).*
4. *A tilt table test .test to trigger syncope and follow pt.*
5. *To R/O cardiac causes :*
   - *12 lead ECG / exercise testing.:*
     - ✓ *abnormal PR , QRS , QT.*
     - ✓ *VENRICULAR ENLARGEMENT.*
   - *ECHO*
   - *24 – hour ECG recording. "holter monitoring"*
6. *to r/o seizure disorders :*
   - *EEG.*
   - *CT/MRI.*
7. *Event dairy and video recording.*

Management : MDT (we need more inputs from) Pediatrian , Neurologist , Cardiologist , Psychtrist may be behavioural " pseudoseizure ".

1. *Non –pharmacological :*
   - ✓ *Reassure parents .*
   - ✓ *Event diary.*
   - ✓ *Avoid of triggers.(corner stone).*
   - ✓ *they should lie down and raise their legs to increase blood flow to the brain.*
   - ✓ *Wearing graded compression stockings may be helpful.*
2. *Pharmacological : Certain medications may also be helpful:*
   a. *Beta blockers (β-adrenergic antagonists) .*
   b. *CNS stimulants : fludrocortisone , SSRIs*
3. *permanent pacemaker may be beneficial or even curative.*

Diagnostic delima

CASE: acute myocarditis.

Jabber is 4 years old boy , came to ER 4days back e high grade fever , cough , running nose . yesterday he develop SOB , tachypneic , tachycardic , weak pulse .

- ***c-x-ray reveal cardiomegaly. Echo reveal cardiomegaly e jection fraction 31.***

Then refer to you (senior registerar)

Take history of ayasha amother of jabber , and make management plan

DIFFERENTIAL DIAGNOSIS :

- ***myocarditis***
- ***dilated cardiomyopathy***
- ***pericarditis***
- ***pneumonia (causing heart failure)***
- ***CHD e heart failure.***

23. General Principle:-

1/ Introduce Yourself (Hello I'm Dr. mohammed a Registrar in Pediatric working in this Hospital)

2/Check for Pt &Mother (I believe that you are Mrs. ayasha a Mother of jaber)

3/Welcoming (Thank you for ur coming to discus jaber's condition)

24. Chief Complaint:-

Can you tell me What is main problem of jaber?

Mother : fever for 3days back.

25. H_X of Presenting Complaint:-

- *fever : can u tell me more about this fever*
- *For how long having the fever? 3days back*
- *How mother know the fever ? by checking by ur hand or by thermometer?*
- *If check by thermometer , how much was the fever?*
- *what mother do to bring fever down (like analagsia)?*
- *is it sudden or gradual ?*
- *is it continues for whole the day or on/off?*
- *Is it ass e abnormal movement?*
- *Ass e night sweating ?*
- *Is it ass e skin spots? Or joint pain ?*
- *What is associated symptoms along with the fever ?*
  - *CVS : anylasis of HEART FAILURE symptoms :*
    - *When started this increase heart beat? Is it continuous or on/off?*
    - *Is it ass with difficult breathing ?is sob more during specific time of the day?*

- *Any change of his lips colour?*
- *Cold periphery ? or swelling in his limb?*

- *RS :*
  - *Is ass with cough? Dry or productive cough? More at night or day ?*
  - *Is it reduce since start or increase ? is it awake him from sleep?*
  - *Is it associated with musical sound from chest?*
  - *Is it associated with any flow or running nose?*
- *Anylasis of other heart failure symptoms (general :feeding / activity/sleeping):*
  - *What about his feeding and appetite ?*
  - *Is he sweating during feed?*
  - *Is his sleep affected? Lie comfortable during sleep ?*
  - *What about his activity?*
  - *Are u feel his extremity is cold?*

- *GIT:*
  - *What about his bowel habit?*
  - *Any episodes of throwing up?*
  - *Tummy ache? Increase in tummy size ?*
- *CNS : any concern regarding vision or hearing ? any*
- *Urinary symptoms :*
  - *Any concern regarding his urination?*
  - *What about amount of urine?*
  - *What about colour of the urine?*

26. past history :

- *does he have any previous illness? Hx. Of loose motion ?*
- *Does he had any history of hospitalization?*
- *Does he require any type of surgery ?*

27. <u>PeriNatal Hx. :-</u>

<u>Prenatal Hx</u>

- *Are u have good antenatal f/up?*
- *Any scan during pregnancy? Does it reveal any abnormalities ?*

<u>Natal Hx:</u>

- *Is he having any concern regarding his delivery?*

<u>Post natal Hx</u> :- or

- *Any concern after delivery?*

28. *Drug HX :- (M. A. C.):*

- *Is he in any medicine currently or in the past?*
- *What is that ? when described ?*
- *Any sensitivity to any medicine ?*

29. *Immunization H_X:-*

- *Any concern regard vaccination (are they up-to-date)?*

30. *Developmental H_X :-*

- *Do you have any concern about his development (like his pears)? I mean*
    - *When start walking?*
    - *Is his vision is normal?*
    - *Is he speaking to you?*
    - *Is he playfull?*
- *Do u have any concern regarding his growth ?*

31. *Nutritional H_X :-*

- *Any concern regarding his feeding?*
- *Any allergy to any food?*

32. *Family H_X :-*

- *Any medical problem in the family?*
- *Any sudden death in the family?*
- *Is the husband is ur relative?*

33. *Social H_X :-*

Personal H_X:-

- *What is the Job of Parents?*
- *Who is taking care Of abdalla?*

Economic H_X :-

- *Is The Income satisfy for ur family.?*
- *Any other Financial support (Governmental / Agencies / Friends)?*
- *How can Transporting Pt for his F/Up ?*

Environmental H_X :-

- *Smoking / Alcohol Consumption /Drugs.*
- *Housing (rented/ Ventilation/ Bed rooms/ Pt has his own room/ NO. of people in room)*

- *Animals (Pets in the house)*
- *What is your Biggest Concerns ?*
- *Do you feel there is an agenda we didn't cover today?*
- *Summarizing the HX . THEN → thank the mother*

Discussion

What is dd?

- ***myocarditis***
- ***Dilated cardiomyopathy.***
- ***Pericarditis***
- ***Pneumonia***
- ***Fibroelastosis.***

What type of myocarditis?

- ***Viral (adeno , cosckai , enterovirus)***

What investigation?

- ***CBC***
- ***CRP.***
- ***RFT / LFT/SE***
- ***Cardiac enzymes: CKMB , LDH, BNP (brain natriuretic peptide).***
- ***PCR for heart muscle biobsy (confirmatory test but not usually done).***
- ***VIRAL PCR (specific test)***
- ***viral antibodies.***
- ***C- X-ray showing cardiomegaly.***
- ***ECG : QRS comlex with low voltage , ST segment abnormality***
- ***ECHO : may show low ejection fraction.***

What is your treatment plan?

- *There is no cure for myocarditis. The heart muscle inflammation will often go away on its own.*
- *The goal of treatment is to support heart function until the inflammation goes away. Many children with this condition are admitted to a hospital. Activity often needs to be limited while the heart is inflamed because it can strain the heart.*

☒ *Supportive Treatment may include:*

- *Admission to icu. With regular monitoring. (Because of low ejection fraction)*
- *Inotropic support : dopamine , dobutamine , epinephrine. For hypotension and low ejection fraction.*
- *Antibiotics to fight bacterial infection*
- *steroids to control inflammation.*
- *Intravenous immunoglobulin (IVIG), a medicine made of substances (called antibodies) that the body produces to fight infection, to control the inflammatory process.*
- *Diuretics and ACEI to treat symptoms of heart failure.*
- *Anti arrhythmic drugs.*
- *Mechanical ventaltor support to help the heart function (in extreme cases)*
- *ECMO.*

Outlook (Prognosis)

- *Recovery from myocarditis depends on the cause of the problem and the child's overall health. Most children recover completely with proper treatment. However, some may have permanent heart disease.*
- *Newborns have the highest risk for serious disease and complications (including death) due to myocarditis. In rare cases, severe damage to the heart muscle requires a heart transplant.*
- *Without treatment 50% mortality rate.*

Possible Complications

- *Enlargement of the heart that leads to reduced heart function (dilated cardiomyopathy)*

- *Heart failure*
- *Heart rhythm problems*

When to Contact a Medical Professional

Call your child's pediatrician if signs or symptoms of this condition occur.

Prevention

There is no known prevention. However, prompt testing and treatment may reduce the disease risk.

Extrahepatic biliary atresia postoperative

What is dd if infant –(jaundice + hepatomegaly.)?

- *Extra hepatic biliary atresia*
- *Choledocal cyst.*
- *Alpha 1 antitrypsin def.*
- *Alagile syndrome*
- *Ex-premature graduates of neonatal icu.*
- *Metabolic : CF , galactocaemia , tyrosinaemia*
- *Infective- TORCH.*
- *Hypothyroidism*

What is DD in older children – (jaundice + hepatomegaly) ?

- *Infective : Hepatitis A,B and C. , CMV ,EBV .*
- *Metabolic :Wilson(if more than 5years) , cystic fibrosis ,alpha1 antitrypsin def , hereditary fructose intolerance.*
- *Choledochal cyst*
- *Autoimmune chronic active hepatitis.*

Dd of prlong jaundice :

Highlight in history (what to ask)

HPI : New Complaint analyses .(see down).

PAST HX :

- *When / Where ?*
- *How present ? usually jaundice , pale stools , dark urine?*
- *Who Diagnose Biliary Atresia 1st ?*
- *Sequence of the Disease :*
  - ✓ *Investigation to confirm diagnosis : HIDA scan , liver imaging , liver biopsy ?*
  - ✓ *Any surgical operation (kasai) at which age ?*
  - ✓ *any complication postoperative - like coagulopathy , ascending cholangitis?*
- *Why he had Liver Transplant ? if any vomiting of blood or passed blood per stool? Or liver failure ?*
- *Post TransPlantation ttt → immunosuppression and its complications?*
- *F/UP → Who is following (Dietician) ? f/up interval ?*
- *Any associated malformations ? like splenic , cardiac , gut (malrotation)*

NEONATAL HX.

VACCATION HX. : did he receive immunization up to date? Any extra vaccine ?

DEVELOPMENTAL HX.

FAMILY HX.

SOCIAL HX : Impaction of recurrent Hospitalization in Family.

Scenario :

GP letter referring : osama 4yrs old presented with jaundice since the neonatal period

TAKE HISTORY FROM SANA A MOTHER OF OSAMA.

General Principle:-

1/ Introduce Yourself (Hello I'm Dr mohammed a Registrar in Pediatric working in this Hospital)

2/Check for Pt &Mother(I believe that you are Mrs sana a Mother of osama)

3/Welcoming (Thank you for coming to discus OSAMA condition)

Chief Complaint:-

I have learned from the G.P. Letter that osama having …….. , can you tell me more about osama condition

Hx of Presenting Complaint:-

a/ analysis of presenting complain and GIT , symptoms of dd :

- *Anylasis of jaundice :*
  - *Is it ass with yellowish discoloration of the eye?*
  - *For how long ? is it static or progressive ?*
  - *If yes is it ass with RT. hypochondrium pain ? ass e itching?*
  - *What colour of stool ? what colour of urine? Loss of weight?*
  - *Hx of blood transfusion? Contact with someone who having jaundice ?*

- *Anylasis of GIT :*

- *what about his appetite ?*
- *did he feel thick (naesuea) ?*
- *did he thrown up (vomiting)? Any episodes of vomiting of blood?*
- *any increase in his tummy size (ascites)?*
- *Any tummy pain (rt. Hypochondrium)? If yes site , intensity , radiation .*
- *what about bowel habbits? If loose motion : How many times per day passing stool (frequency) ? What about its amount?*
- *what is the colour of his motion ? is it ass e blood " malena" ? or mucus ?*

b/ anylasis of systemic review :

- *General :*
  - *is it ass with fever ? ……*
  - *What about his activity ? …….*
  - *what about his sleeping?.....*
- *MSS:*
  - *is there any skin changes or skin spots (bruising – vit k def.)?*

- *Ulceration ? hypo or hyperpigmentation ?*
- *Any joint pain ?*

- *Urinary system :*
  - *any concern regarding his urination ?*
  - *What colour of the urine? Dark yellow.*
  - *Amount and frequency of urine ?....." hepatorenal syndrome".*

- *RS (Cystic Fibrosis) :*
  - *Any cough ? or difficult of breathing – pleural effusion? Any chest pain ?*
  - *Musical sounds from the chest?*
- *CVS :*
  - *any increase in heart beat?*
  - *Any swelling in the feet?*
- *CNS :*
  - *Any loss of consciousness , or abnormal pattern of sleep? Hepatic encephalopathy.*
  - *any abnormal movement ?*
  - *any episodes of not control his balance (ataxia)?*
  - *Any concern regading his vision ? or hearing ?*

c/ analysis of weight loss

- *When came to ur concern that osama his weight not increase?*
- *How u know he is not gaining weight? Is it significant loss of weight?*
- *Is this drop in weight gradually or rapid drop? Over how much time?*
- *Any intervention done for that? Does he change feeding pattern after that ? any response for that?*
- *Does u have chart for his growth previously?*
- *Any f/up for his weight?*
- *Any dietien involve ?*

D/ Nutritional history in detail:

- *Was he in breast feed or formula? For how long*
- *Time of weaning? Is it complete or partial weaning?*
- *Time of start to give him mix food? And what type of food u start with?*
- *What type of food u give now days?*
- *Did u give by mouth or through NGT.*
- *did u give especial type of food ?*
- *how many times /day?*
- *Any dietien involve ?*
- *He had any allergy to any type of food?*

<u>Past Medical Hx :-</u>

- *When diagnosed (at which age)?*
- *How present at the time of diagnosis ? usually prolong jaundice , pale stools , dark urine., ?*

- *Where diagnosed ?*
- *Who diagnosed?*
- *Is he/ she need Hospital Admission ? where admitted (in ICU or ward) ?*
- *What investigation done for him / procedure done?*
    - *Liver U/S. (imaging of liver)*
    - *+/- HIDA scan.(to evaluate if there is obstruction to normal flow of bile).*
    - *+/- liver biobsy. (any sample of liver tissue done for him)?*
- *They told you what is the diagnosis?*
- *No any associated malformation ?*
- *What was the treatment?*
- *Any operation done for him?*
- *what is the operation(kasai/ portoenterostomy) ? at which age(better results before 8 weeks.)? Any complications after surgery ,like fever (ascending cholangitis).?*
- *Any more operations ? if yes liver transplantation*
- *When and Why liver transplantation ? any recurrent oesophageal varices and or liver f.?*
- *Develop any complication postoperatively liver transplantation ?*
- *What drugs given postoperatively ? immunosuppersion and steriod*
- *Is she develop any complication due to immunosuppersion?*
- *Any f/up after that? Intervals of follow up ? monitoring of treatment ? whose involve in f/up?*

- *Any Previous illnesses.?*
- *History of other hospitalization ? need picu*
- *History of blood transfusion ?*
- *History of vomiting blood ?*
- *History of passing blood per rectum ?*
- *Any history of his blood not clotted?*

Drug HX :-

- *is he in any current medications other than immunosuppresion?*
- *is he having any allergy to any drug?*

Perinatal history:

- *Any concern regarding ur preg with osama?*
- *Any concern regarding delivery? What gestational age during delivery ? what was the weight?*
- *Any concern after delivery?*

Immunization H_X:-

- *How about Vaccination (are they up-to-date)?*
- *Any extra vaccine?*

Developmental H_X :-

- *Do you have any concern about his development (develop like his pears)?*

Family H_X :-

- *Any family history of similar condition ?*
- *Any Death in the family?*
- *Consanguinity (does your husband is close relative)?*
- *How many children u have?*

Social H_X :-

- *Impact of the disease on family:*
  - *spend long periods in hospitals that are often far from their home ?*
- *Impact of the disease on pt himself:*
  - *Are you notice any behavioural changes ?*
  - *Any effects on school attendance?*
  - *School performance ?*
  - *Effects on school friends and sibling?*
  - *Effects of the disease on activity ?*
  - *Effects of Dietry restrictions?*
  - *Effects of drugs immunosuppersion?*
- *Personal H_X:-*
  - *What is the Job of Parents?*
  - *Who is taking care of Pt ?*
  - *Dose Parents live together?*
  - *What are Pt preferred (sports / play / activity)*
- *Economic H_X :-*
  - *The Income of the family*
  - *Any other Financial support (Governmental / Agencies / Friends)?*
  - *How can Transporting Pt for his F/Up ?*

- *Environmental H_X :-*
  - *Any one Smoking in the family ?*
  - *Housing (Ventilation/ Bed rooms/ Pt has his own room/ NO of people in room)*
  - *Animals (Pets in the house)*

***Summarizing the HX .*

***What is your Biggest Concerns ?*

discussion

CAUSES OF PORTAL HYPERTENSION:

- *Pre hepatic:*
  - *Portal vein obstruction/ thrombosis. (normal size liver + no stigmata of liver disease)*
    - ✓ *Causes : developmental defect , cong anomalies , sepsis*

- *Intrahepatic*
    - *Pre-sinusoidal : neoplasia , schistosomiasis , hepatic cyst.*
    - *Sinusoidal :*
        - ✓ *cong hepatic fibrosis :(AR) : well , large hard liver , no stigmata of liver disease (LFT preserved) , Splenomegaly , Polycytic kidneys.*
        - ✓ *cirrhosis ,(small liver) , biliary atresia ,neonatal hepatitis , alpha 1 antitrypsin def.*
    - *Post-sinusiodal : veno – occlusive disease.*
- *Post hepatic*
    - *Budd-chiari syndrome (hepatic vein obstruction) (liver enlarge)*
    - *Rt ventricular failure*
    - *Constrictive pericarditis.*

What are investigations for extrahepatic biliary atresia (EHBA)?

- *Liver function test :*
    - *s. bilirubin (direct /indirect)*
    - *liver enzymes*
    - *s.protein*
- *clotting study : prothrombin time (prognostic value)*
- *s.ca , phosphate , ALP (vit D) ,vit E level , serum retinol level.*
- *Stool – acholic stools.*
- *u/s abd. Showing narrow gallbladder and R/O choledochal cyst*
- *Hida scan ….dignostic test*
- *Liver biobsy shows extrahepatic biliary obstruction*
- *Percutaneous transhepatic cholangiography (PTCG)*
- *Operative cholangiogram – gold standard for diagnosing EHBA.*
- *Investigations to r/o other causes of acholic stools:*
    - *Blood for : TORCH screen , AAs ,TFT .*
    - *Urine :reducing substance ,metabolic screen , c/s*
    - *Sweat test : CF*
    - *Radiology : for butterfly vertebra in allagile*
    - *Cardiac assessment : PS (allagille syndrome).*

What is treatment of EHBA?

- *Kasai operation (hepato porto – enterostomy).*

- *Liver transplantation.*

What is Outcome of kasai operation?

- *1/3 go to chronic liver disease*
- *1/3 require liver transplantation*
- *1/3 curable.*

What indications of liver transplantation?

- *Extra hepatic biliry atresia (common cause)*
- *Hepatoma*
- *End stage liver disease*
- *Recurrent serious or life threatening complication of liver disease (bleeding varices , gross encephalopathy , persistant severe ascites.)*
- *Poor quality of life (intractable pruritis , lethargy , anorexia , recuurent infection)*
- *Metabolic disorder : (Alfa 1 antitrypsin , Galactoceamia ,Wilson disease.)*

What are Complications of liver transplantation?

- *Acute rejection 50% - 60% and late rejection.*
- *Sepsis (50%)*
- *Biliary leaks 20%*
- *Hepatic vascular compromised*
- *Post-transplant lymphoproliferative disorder*

What are Contraindication of liver transplantation?

❖ *Irreversible extrahepatic disease:*

- *HIV*
- *Irreversible brain damage*
- *Incurable malignancy*

How u Monitoring of complications after transplantation?

- *Serial LFTs*
- *Tissue sampling*
- *Imaging : Doppler u/s for vascular patency ,MRI , percutaneous transhepatic cholangiography (PTC).*

What are immunosuppersion used in liver transplantation ?

- *Calcineurin inhibitors (more potent)*
- *Tacrolimus (+ steroids / monoclonal abs)*
- *Cyclosporine (+ azathioprine)*

What are the side effects of immunosupresion?

- *Nephrotoxicity (monitor by GFR)*
- *Hypertension*
- *Neurotoxicities and hyperlipideamia.*

<u>management of cirrhosis (Chronic liver disease):</u>

MDT headed by paediatric hepatologist

- *treat the cause*
- *dietien : adequate protein , and fatty acids ,high carbohydrate diet ,vitamins and minerals .feed may be provided with nasogastric or parental feeds.*
- *Restricting salt intake and/or diuretics to prevent ascites.*
- *Treatment of complications (emergencies):*
    1. *GIT bleeding :*
        - *Admit (even if small)., iv line , cross match.*
        - *IV vasopressin or octerotide.*
        - *Sclerotherapy/ Variceal band ligation.*
        - *Balloon tamponade with sengstaken-blackemore tube. If fail above measure.*
        - *Portosystemic shunts.*
    2. *bacterial peritonitis and ascending cholangitis*
        - *Education*
        - *Antibiotic*
    3. *hepatic encephalopathy:(aim to decrease nitrogenous load to the bowel and reduce the bacterial production of ammonia)*
        - *Reduce protein intake*
        - *Oral antibiotic (neomycin)*
        - *Oral Lactulose to remove waste product through stool*
        - *IVF dextrose.*
    4. *hepatorenal failure : require liver transplantation.*
    5. *Pruritus ……. Ursodeoxycholic acid.*

hyperthyroid disease

Case : somyia 12yrs girl came with concern that has anxiety , loss of wt inspite of increase appetite , fatigability , 1 month back complain of neck swelling. Take history from sara a mother of somyia.

Dd of loss of weight and increase appetite ?

- ***Dm***
- ***Hyperthyroidism***
- ***Malabsorption syndrome***
-
- ***Chronic infection***
- ***Brucellosis***
- ***SLE***
- ***ADHD***
- ***Drug abuse***
- ***tumor***

Causes of hyperthyroidism :

- *Graves disease.(toxic diffuse goiter) .*
- *Multi nodular goiter.*
- *Toxic adenoma*
- *Inflammation of thyroid*
- *Pituitary tumor*

What to ask in graves' disease :

22. HPI:

- *Eye and neck :*
  - ✓ ***Are you notice any protrution of the eyes ? diagnostic for graves.***
  - ✓ *are u notice any neck swelling? If yes :*
    - *When started ? is it cover whole neck ?*
    - *Is it increase rapidly or gradually ?*
    - *is it move with swallowing ?*
    - *is it ass e difficulty of breathing ? or difficulty in swallowing?*
    - *Any change of skin over it ?*
  - ✓ *Any concern regarding your hair ? "thinning of hair/falling "*
- *General :*
  - ✓ *Is it ass e fever ?*
  - ✓ *is it ass e sweating ?*
  - ✓ *are you feel hot in cold weather " heat intolerance "? where are you sleeping in cold weather?*
  - ✓ *what about her activity " over activity "? .*
  - ✓ *What about her sleep "insomnia"?*
- *Growth hx. : What about her growth ?*
    - *increase in height , reduce in weight? How you know ? is it significant ? are you seeking medical advice?*
  - ✓ *Any learning difficulties?*

- ✓ *Any concern regarding her behavioural problems.?*
- ✓ *Any emotional changes?*

- *GIT symptoms :*
  - ✓ *What about her appetite (increase) ?*
  - ✓ *What about her bowel habbits (frequent bowel movement)?*
  - ✓ *Is she develop vomiting ? or nausea ?*
- *CVS :*
  - ✓ *Is she aware of fast heart beat?*
  - ✓ *Chest pain ? any episodes of falling down*
- *RS :*
  - ✓ *Any cough or difficult of breathing?*
  - ✓ *Any musical sound ?*
- *CNS :*
  - ✓ *Any abnormal movement "tremor"?*
  - ✓ *any weakness when want to stand from sitting position?*
  - ✓ *any concern regarding her hearing "pendred's syndrome".*
  - ✓ *Any concern regarding her vision "double vision"?*
  - ✓ *Is she feel headache ?*
- *MSS :*
  - ✓ *Any joint pain or swelling ? or muscle weakness ?*
  - ✓ *Any skin hyperpigmentation "Addison" , or*
  - ✓ *hypopigmentation "vitiligo",*
  - ✓ ***Any swelling over leg / foot ? "pertibial myxodema" - diagnostic for graves"***
- *Urinary system :*
  - ✓ *Any concern regarding her urine ? frequency of urine?*
- *menstrual history :*
  - ✓ *any concern regard her period? "Oligomenorrhea/ prolong cycle ", regular or not ? amount?*

23. Past history :

- *Any other previous illness ? Any history of DM , addison's , vitiligo?*
- *What has been done for her so far ? Any surgical intervention ? or hospitalization ?*
- *Any history of blood transfusion ?*

24. Drug history :

- *Any current medication ?*
- *Any allergy to any drug?*

25. Nutritional history :

- *what type of meal ? any especial type of food ?*
- *how many meal per day? Amount of meal ?*
- *Are you drink more than before ?*

26. Peri natal history :

- *any concern regarding her pregnancy , delivery and after delivery.?*

27. Vaccination history :

- *is she vaccinated up to date ? any extra vaccine?*

28. Developmental history :

- *any concern regarding her development?*

29. Family history :

- *FHx of thyroid disease , DM, Addison , vitiligo ?*
- *is your husband is your relative? What is the relation ?*
- *How many children you have ? are they ok and well?*

30. *Social history:*
    - *Personal :*
        - ✓ *whose taking care of her ?*
        - ✓ *job of you and your husband?*
        - ✓ *What is your level of education?*
    - *Economic :*
        - ✓ *are u happy of your income ?*
        - ✓ *having your own car ?*
    - *Environment :*
        - ✓ *Smoking may increase the risk , and make eye problem worse.*
        - ✓ *Housing*
        - ✓ *Animals*
    - *Impact of the disease on family?*
    - *Impact of the disease on pt.:*
        - ✓ *What about her school performance ?*
        - ✓ *What about her peer-relation? affected b/c of aggressiveness.*
        - ✓ *Is she bullied at school b/c of neck swelling or protruded eye?*

DISCUSSION

Discussion :

ΔΔ :- of neck swelling:

1. *Grave's D. (Vitiligo)"Commonest" .*
2. *Hashimotos Thyroiditis.(1^0 Hypothyroidism-autoimmune D)*
3. *Tumor of sternomastoid.*
4. *Thyroglossal Cyst.*
5. *Cystic Hygroma*
6. *Haemangioma*
7. *Branchial Cyst.*

What are causes of goiter?

1. *Euthyroid goiter :*

- *Autoimmune thyroiditis (thyroid antibodies present.)*
- *Colloid / simple goiter (no antibodies present).*
- *Hyperplasia due to iodine def.*

2. *Hyperthyroid :*

- *Graves disease (diffuse toxic).*
- *multi- nodular goitre (diffuse non toxic):*
    - *Sub acute thyroiditis (inflamed gland).*
    - *Carcinoma multi nodular goitre*
    - *Infiltration – langerhans cell histocytosis.*
- *Toxic adenoma .*
- *Pituitary tumor .*

What is graves disease ?

- *is autoimmune disease , Characterize by : triad of*
- *hyperfunctioning goiter ,*
- *ophthalmopathy (exophthalmus) due to infiltration of orbital contents by inflammatory cells , and sympathathetic overactivity.*
- *dermopathy(peritibial myxoedema) over legs."orange peel appearance" due to deposition of antibodies. ,*
- *trigger by infection (viral , bacterial infection "yersinia enterocolitica ") , pregnancy , stress*
- *associated with HLA DR3/B8 , 50-80% of hyperthyroid causes.*

WHAT IS PRESENTATION GRAVES?

- *Insidious*
- *Emotional disturbance /motor hyperactivity.*
- *Sweatiness and increase appetite.*
- *Weight loss/gain*
- *Heat intolerance*
- *Deterioration in school work.*

Investigations :

- *CBC , RFT , LFT , RBS , SE , S.ca and phosphorus.*
- *TFT : TSH - low , free T4,T3 - high .*
- *Thyroid auto antibodies in graves' disease include :*
    - *TSI :Thyroid stimulating immunoglobulin IgG. "thyrotropin recptor stimulating antibody-TRSA" more specific.*
    - *TGI : thyroid growth immunoglobulin.*
    - *TBII : Anti TSH- receptor antibodies.(TSH – binding inhibiting immunoglobulin).*
- *Other auto antibodies found in associated diseases*
    - *Pancreatic islet – cell antibody*
    - *Adrenal cell antibody*
- *Radioactive iodine uptake : iodine given orally or iv ,person with hyperthyroidism absorp more iodine.*
- *Imaging : radionuclide scanning.*
- *CK-MB elevated.*
- *Biopsy if thyroidectomy is done.*
- *Bone age advance*
- *Investigate 1st degree relatives*

<u>Management of graves</u>

1. *MEDICAL :*
    - *Carbimazole / methimazole 6month - 2year.*
        - *(start after + ve antibodies because differeniate b/w hashimoto and graves)*
        - *Carbimazole and thyroxine (block replacement).*

- *Propyl – thiouracil block synthesis of thyroid hormone can be given to pregnant , lactating mother , and in neonatal period.*
  - ✓ *Side effects of carbimazole : a granulocytosis., a plastic anaemia. "sore throat and fever".*
  - ✓ *Urticrial Rash and peripheral neuritis, hepatitis , glomuleronephritis., systemic lupus like vasculitis.*

- *Propranolol : for BP , tremor , anxiety.*
- *Steroid , eye drop lubricant for eye sign*

2. *Radio iodine : given for more than 12 yrs of age , and in case of treatment failure.*
   - *not associated with genetic damage or malignancy.*
   - *SE: hypothyroidism*
   - *Contraindications : pregnancy , ophthalmopathy , solitary nodule., children below 12 yrs.*

3. *SURGICAL : definitive treatment.*
   - *indicated in (large gland , when suspect cancer , intolerance , allergic or refusal of iodine , toxic nodule)*
   - *subtotal thyroidectomy need thyroxine replacement (hypothyroidism).*
   - *SE : is cutting of recurrent largneal nerve., hypo parathyroidism , haematoma.*
4. *Avoidance of foods high in iodine*
5. *Children spont. remision Within 2-4 yrs.*

<u>What are eye signs in graves' disease ?</u>

- *lid lag "von graefe's sign" : delay in follow of eye lid in downward gaze.*
- *lid retraction "darlymple sign":*
- *exophthalmos : protrusion of the eye. Proptosis can be permanent . bilaterally ,asymmetrically , and persist after pt become euthyroid.*
- *optic nerve compression , Optic atrophy secondry to pressure effects behind then eye.*

- *corneal exposure. Exposure keratopathy (secondry to reduced blinking and unable to close the eye)*
- *External ophthalmoplegia (uncommon) caused by lymphocytic infiltration and glycosaminoglycan deposition in medial and inferior rectus muscles*

What are cause of eye signs ?

- *Caused by antibodies against antigens shared by the thyroid and eye muscles.*
- *Retro – orbital inflammation and oedema of extra – ocular muscles cause exophthalmos (proptosis) and limited eye movement.*

<u>What is the thyroid storm ?</u>

- *it is medical emergency of severe thyrotoxicosis , characterize by*

- ✓ *rapid , irregular heartbeat*
- ✓ *hyperthermia*
- ✓ *heart failure ,*

- ✓ *vomiting , diarrhea , mental agitation.*
- ✓ *Coma and Death occur in 20-50%.*

- *Treatment :*
  - ✓ *Hospital admission.*
  - ✓ *IV. fluid , temp control (avoid aspirin).*
  - ✓ *Treat infection*
  - ✓ *iv propanolol , methimazole , iv steroid*
  - ✓ *digitalis for heart failure ,*

Complications of graves' disease :

- *Miscarriage*
- *Osteoporosis due to mineral loss.*
- *HTN and wide pulse pressure (more than 30 difference b/w systolic and diastolic).*
- *Atrial fibrillation*
- *Stroke*
- *Blindness due Corneal infection and optic atrophy.*
- *Death : if pt went to surgery*

WHAT DRUGS CAUSE HYPERTHYROIDISM ?

- AMIDARONE .
- LITHIUM .
- EXOGENUS IODINE.

Hypothyroidism (M.BEATIE 475-478)

- *Hand for : pulse and dry and cold.*
- *Myxodema.*
- *Ankle jerk …. Slow relaxation*

<u>What is graves disease ?</u>

- *is autoimmune disease , Characterize by : triad of*
- *hyperfunctioning goiter ,*
- *ophthalmopathy (exophthalmus) due to infiltration of orbital contents by inflammatory cells , and sympathathetic overactivity.*
- *Dermopathy (peritibial myxoedema) over legs. "orange peel appearance" due to deposition of antibodies. ,*
- *trigger by infection (viral , bacterial infection "yersinia enterocolitica ") , pregnancy , stress*
- *associated with HLA DR3/B8 , 50-80% of hyperthyroid causes.*

<u>What are other eye signs in graves' disease ?</u>

- *lid lag "von graefe's sign" : delay in follow of eye lid in downward gaze.*
- *lid retraction "darlymple sign":*

- *exophthalmos : protrusion of the eye*
- *optic nerve compression , corneal exposure.*

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  - ✓ *rapid , irregular heartbeat*
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  - ✓ *iv propanolol , methimazole , iv steroid*
  - ✓ *digitalis for heart failure ,*

Investigations :

- *CBC , RFT , SE , S.ca and phosphorus.*
- *TFT : TSH - low , free T4,T3 - high .*
- *Thyroid auto antibodies in graves' disease include :*
  - *TSI :Thyroid stimulating immunoglobulin IgG. "thyrotropin recptor stimulating antibody-TRSA" more specific.*
  - *TGI : thyroid growth immunoglobulin.*
  - *TBII : Anti TSH- receptor antibodies.(TSH – binding inhibiting immunoglobulin).*
  - *Exophthalmogenic immunoglobulin.*
  - *Dermopathy – associated immunoglobulin.*
- *Other autoantibodies found in associated diseases*
  - *Pancreatic islet – cell antibody*
  - *Adrenal cell antibody*
- *Radioactive iodine uptake : iodine given orally or iv ,person with hyperthyroidism absorp more iodine.*
- *Imaging : radionuclide scanning.*
- *CK-MB elevated.*
- *Biopsy if thyroidectomy is done.*

Management of graves

6. *MEDICAL :*
   - *Carbimazole / methimazole 6month - 2year.*
   - *Propyl – thiouracil block synthesis of thyroid hormone can be given to pregnant , lactating mother , and in neonatal period.*
     - ✓ *Side effects : a granulocytosis., a plastic anaemia. "sore throat and fever".*
     - ✓ *Urticrial Rash and peripheral neuritis, hepatitis , glomuleronephritis., systemic lupus like vasculitis.*

   - *Propranolol : for BP , tremor , anxiety.*

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    - *subtotal thyroidectomy need thyroxine replacement (hypothyroidism).*
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- *HTN and wide pulse pressure (more than 30 difference b/w systolic and diastolic).*
- *Atrial fibrillation*
- *Stroke*
- *Blindness due Corneal infection and optic atrophy.*
- *Death : if pt went to surgery before become euthyroid .*

JUVENILE DERMATOMYOSITIS

DD:

- ***SLE : criteria to diagnose : 4 out 11***
    - *Malar rash*
    - *Discoid rash*
    - *Photosensitivity*
    - *Oral ulcers*
    - *Arthritis*
    - *Serositis*
    - *Renal disorder*
    - *Neurological disorder*
    - *Haematological disorder*
    - *Immunological disorder*
    - *Antinuclear antibody.*
- ***JDM: 5 criteria to diagnose:***
    - *Characteristic rash 2 are pathognomic : gottron's papules , helitrope rash …….plus 3 out of 4 :*
    - *Symtrical proximal muscle weakness*
    - *Elevated muscle derived enzymes (CK , LDH , AST , ALT).*
    - *Muscle histopathology confirming the typical pattern*
    - *EMG changes of inflammatory myopathy.*

WHAT TO ASK :

HPI and systemic review :

- *General (fever , wt loss , nutritional status*
- *MSS :*
    - *Skin rash :*
        - *when started ?*
        - *describe the rash ? colour of the rash?*
        - *site started first - distrubation of rash ?*
        - *progress of the rash ?*
        - *Aggravating factors : increase in sun exposure "photosensitive rashes "*
        - *scarring and atrophy.*
    - *muscle weakness , cramps ,*
    - *joint symptoms(morning stiffness , nocturnal discomfort ,pain , swelling , limitation of movement)*
    - *Calcinosis : any hard swelling in extesensor area and buttock?*
    - *Level of functioning with daily activity :*
        - ✓ *having any problem in speech ,eating , swallowing , sitting , walking , climbing stairs or combing hair.*
        - ✓ *Need any assistance device(wheel chair)?*
        - ✓ *Need any home modifications?*
- *GIT symptoms (ulceration , perforation , haemorrhage , malabsorption)*

- ✓ *appetite , bowel habbits ? colour of stool ?*

- *GENITOURINARY SYMPTOMS : (renal impairment , ureteral involvement)*
  - ✓ *Amount of urine ?*
  - ✓ *Colour of urine (myoglobinuria)*
- *EYE PROBLEM : (glaucoma , cataract , retinopathy).*
  - ✓ *any visual impairement ?*
- *neuropsychiatric symptoms : mood swing and depression*
- *menstrual hx.: uretral involvement interfere with menstruation.*
- *OTHER SYPTOMS : CVS*

Past hx. :

- *When , where , how present , investigations*
- *Possible triggers (infectious agents*
- *Excessive sun exposure*
- *Hospitalization*
- *Development of complication and their management*
- *Any F/UP.*

Drug hx.:

- *What are drug received? How often ? who give ?*
- *S/E of the drugs :*
  - ✓ *steroid effects (myopathy , cushing's syndrome , stunted growth .*
  - ✓ *cyotoxic drugs (myelosuppression , infection , hepatotoxicity , hypertension.*
  - ✓ *IVIG (MENINGITIS , thromboembolism)*

Family hx.:

- *any connective tissue / autoimmune disease.*

Social hx :

- *Impaction on child (school absence , limited daily activity , poor self image)*
- *Impaction on parents (financial , home modification , wheelchair , computer , transport , frequent hospitalization , drugs)*
- *Impact on sibling (rivalry).*
- *Benefits received : child disability allowance*
- *Social supports*

Discussion

INVESTIGATIONS:

- *CBC*
- *COAGULATION PROFILE.*
- *INFLAMMATORY MARKERS.*
- *CREATININE KINASE.*
- *MUSCLE ENZYME .*
- *MUSCLE BIOBSY*
- *EMG*
- *RHEUMATOID FACTOR.*
- *ANA*

- *DsDNA*
- *ANTICARDIOLIPIN ANTIBODY.*

Management : MDT

- *Physiotherapy.*
- *Avoid sun light or use sun protector.*
- *Social service.*
- *Topical agent*
- *Steroids*
    - *Corticosteroids : high dose + Omeprazole*
    - *Iv methlypredinsolone for severe cases.*
- *Immunosuppressive for refractory agents:*
    - *Methtrexate with folic acid : use as steroid sparing to decrease side effects of steroid.*
    - *Cyclophosphamide*
    - *IVIG*
    - *Azathioprine*
    - *Cyclosporine*
- *Biological agents : a.TNF , etanercept and infliximab.*
- *Management of complication accordingly.*

Prognostic predictors :

- *Response to management :*
    - *Normalization of elevated muscle enzymes.*
    - *Resoluation of skin rash.*
    - *Increase muscle strength by history and objective measures.*

Thyroid disease

Causes of hypothyroidism :

1ry : (defect in thyroid gland)

- *Congenital : throid dysgenesis , agenesis , hypoplasia*
- *Acquired : autoimmune , post surgery , iodine def.*

2ry (defect central)

- *Congenital : pitutry abnormalities*
- *Acquired : post cranial irradiation ,post tumor , post surgery.*

What to ask in thyroid "hyperthyroid"

31.HPI:

- *General :*
  - ✓ *fever ,*
  - ✓ *sweating , heat intolerance ,*
  - ✓ *restlessness "hyperactivity", anxiety,*
  - ✓ *weight loss, growth rapid : increase in height , reduce in weight*
- *Eye and neck :*
  - ✓ *protrution of the eyes .*
  - ✓ *neck swelling*
- *GIT symptoms :*
  - ✓ *appetite (increase) ,*
  - ✓ *bowel habbits (diarrhea)*
- *Cvs :*
  - ✓ *increase in heart beat*
- *Cns :*
  - ✓ *any weakness when want to stand from sitting position*
  - ✓ *headache*
- *Mss :*
  - ✓ *skin hyperpigmentation "Addison" , or*
  - ✓ *hypopigmentation "vitiligo",*
  - ✓ *pertibial myxodema .*
- *Urinary :*
  - ✓ *frequency of urine*

32.Symptoms analysis :

33. *Past history :*
    - *When , where , by whom , how , need admission or not*
    - *Drug history : what medication ? dose of drug?*
    - *Any surgical intervention ?*
    - *Any history of DM , addison's*
34. *Nutritional history : what type of meal ? how many meal per day*
35. *Perinatal history*
36. *Vaccination history : any extravaccine?*
37. *Developmental history and growth*
38. *Family history : of thyroid disease*
39. *Social history:*
    - *Impact of the disease on family?*
    - *Impact of the disease on pt.? school performance ? any learing difficulties?behavioural problem?*

Management of hypothyroid :

Investigation :

- ✓ *TSH , T3 , T4*
- ✓ *Screening for cong. Hypothyroidism :*
    - *TSH (IF MORE THAN 10)……HYPO*

Management of hypothyroidism :

- ✓ *THYROXINE TABS*

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Management of hypothyroidism :

- ✓ *THYROXINE TABS*

Recurrent Abdominal Pain

ΔΔ functional abdominal pain (not pathological)- rome iii criteria – 3/2016

1. *Functional Dyspepsia(upper abd pain ass. with food).*
2. *Abd- Migraine(Ass – with Pallor / V^O /+Ve Family HX).*
3. *Irritable bowel syndrome (alternate Bowel habits)*
4. *Functional Abdominal pain syndrome – none of the above features but others causes excluded.*

Features of Organic Abd- Pain (RED FLAG features):

1. *Very young .*
2. *Pain (well localized / away from umbilical / awakening from sleep)*
3. *G.I.T. (change Bowel habits "diarrhea" / vomiting "bilious" / Blood in stool /perianal disease)*
4. *Associated symp- (unexplained Fever / Wt loss / Faltering Growth)*
5. *family hx : celiac disease / IBD.*

POINTS TO CONSIDER IN HISTORY :

Concentrate on Symptoms Analyses + Social H_X.

1. *Symptoms Analyses:-*

a. *abd .Pain : can you describe for me this pain ?*
   - *S: site ? centre of abd. Near belly button.*
   - *O : onset: when pain start ?*
   - *C :character ? stabbing/heavy*
   - *R: Radiation ? localized / radiated.*
   - *intensity ? severe/ mild . Does awakening pt.?*
   - *Duration and frequency ? most days / 20 min – 2hours*
   - *A : associated symptoms ? any associated GIT symptoms*
   - *T: time of day or night.?*
   - *E : exacerbating factors : like spicy food or chocolate / relieving factors ? is paracetamol help*

b. *G.I.T. :*
   - *Appetite ? reduce*
   - *nausea / vomiting /reflux. ? feel sick but not vomited.*
   - *Bowel habits / Stool pattern / consistency /any blood in stool /completeness of evacuation.? Bowel open 1-2 /day – normal consistency./ easy to flush?*
   - *Tenismus / any swelling from private area when u wash him?*

c. *Other :*
   - *General : fever , wt loss , pallor.*

- *Urinary symptoms : pain during micturation ? ……UTI*
- *Mss : Skin spots / Joint pain ? …..HSP.*
- *R.S : cough , chest pain…….pneumonia*
- *CNS : Eye symptoms , headache , abnormal movement*

2. *nutritional history and growth :*

- *Weight loss analysis., growth delay*
- *Can you tell me about his diet ?*
  - ✓ *Type of food*
  - ✓ *Allergy to any type of food.*
  - ✓ *Any food aggravate or relieve the symptoms*

3. *past medical history :*
   - *Previous illness ?*
   - *Previous hospitalization ?*
   - *Previous surgery ? blood transfusion?*
   - *Drug history : allergy to any drug?*
   - *Neonatal hx*
4. *Vaccination hx : is he vaccinated up to date?*
5. *Developmental hx:*
6. *Family HX :*
   - *Similar condition?*
   - *Any condition related to tummy like I.B.D / I.B.S. / Migraine? mother having migraine , brother having constipation. , sister having crohn's*
   - *Is your husband your relative?*
   - *How many children you have?*
7. *Social hx : (look for stressfull condition)*
   - *Can you tell me more about his school ?*
     - ✓ *In which grade ? is school affected by disease ?*
     - ✓ *is he happy at School ?*
     - ✓ *any history of changing school ? relationship b/w him and his peers?*
     - ✓ *Nurse school aware his tummy pain*
   - *Impact of the disease on pt :*
     - ✓ *School / Play / Peer Relation*
   - *Impact of the disease on family :*
   - *Personal :*
     - ✓ *job of parent ? education of parent ? father is army and away half of year.*
     - ✓ *who take of pt. and sibling? Stable marriage relation ? all family living together?*
- *Economic :*
- *Environment :*

<u>What is your biggest worry ? mother think this is crohn's disease.</u>

<u>Discussion</u>

Functional abdominal pain : diagnosis of exclusion

Dd of acute abdominal pain (surgical causes) :

- *Appendicitis*
- *Intussuception : intermittent colicky abd. Pain , pale e pain , vomiting , passage of blood or mucus per rectum "red currant jelly stool "*
- *Mid gut volvulus : neonatal abd. distension , bilious vomiting*
- *Renal or biliary calculus.*
- *Peritonitis*
- *Peptic ulcer.*
- *Hydronephrosis.*
- *Meckel's diverticulitis.*
- *Torsion of ovary and testis .*

Dd of Abdominal pain due to medical problems :

- *Functional abdominal pain related to food or new stress in home or school.*
- *Intra abdominal : Mesenteric adenitis ., pelvic inflammatory , UTI ,IBD , HSP , gastroenteritis , pancreatitis., hepatitis , gastritis., constipation.*
- *Coliec disease*
- *Migraine*
- *Food intolerance*
- *Systemic causes : DKA , Lower lobe pneumonia., sickle cell disease.*

Management of functional abdominal pain:

- *Investigation to R/O common organic causes esp. celiac and IBD.*
  - *Blood :*
    - *C.B.C. / Inflammatory Markers –CRP,ESR*
    - *L.F.T. / UE /amylase /glucose.*
    - *celiac screen.*
  - *Stool culture.*
  - *Urine analyses + C.S.*
  - *Imaging :*
    - *X-ray of abdomen : if suspect perforation*
    - *X-ray chest if respiratory symptoms.*
    - *U/S abdomen. If suspect appendicitis , renal problem ,pancreatitis.*

If all above investigation normal this means functional abdominal Pain :

Mdt : Team Involving : pediatrician , school nurse , dietician , behavioural therapist

- *Life Style strategies (healthy food + plenty fluid + exercise)*
- *Simple Analgesia for pain/ laxative in case of constipation*
- *Family education and acceptance of diagnosis : Reassure no serious pathology "but pain is real" + try to attend school.*

- *Referral to Child & Adolescent mental Health Team + Psychologist look for family dynamics ,help in return to normal functioning.*
- *Contact with school to see any barriers to school attendance.*
- *Regular f/up to monitor progress , include school attendance*

Constipation

Scenario : *nuha is 8 yrs old , complain of constipation , abdominal pain , went to dispensery frequently but no definitive diagnosis for her . start lactulose syrp e out improvement.*

Referred to you for further management.

∆.∆. of constipation :

1. *Functional constipation (90%)*
2. *Oraganic constipation :*
   - *Hirschprung D.*
   - *endocrine/ metabolic disorders (Hypothyroidism , hypercalcaemia , hypokalaemia , CF).*
   - *neurogenic constipation due to : Spina Bifida , trauma , neurofibromatosis .*
   - *Meconium Ileus Equivalent S (CF).*
   - *anal anatomic malformation./anal fissure.*
   - *others : drugs "opiods" , Poor Feeding , celiac .*
   - *UTI.*

Red flags symptoms and signs suggestive of organic constipation:

- *Early onset of constipation , neonatal or early infancy.*
- *Failure to thrive / growth failure.*
- *Neuropathic bowel : urinary symptoms (urinary incontince or bladder disease),*
- *Hirschsprung's : Delay passage of meconium after 24 hr after birth.*
- *Passage of blood (unless due to anal fissure).*
- *Acute onset constipation*
- *Vomiting*
- *Sings of systemic illness , multisystem involvement (recurrent chest infection)*
- *Anterioly displaced anus.*
- *Anal stenosis*
- *Protein intolerance in 1st 3 yrs of life.*
- *Hx. Of sexual , physical or emotional abuse.*

What to ask in hx.:

HPI :

- *GIT :*
- *Anylasis of constipation (bowel habbits):*
  - *What do you mean by Constipation ?*
  - *When problem start ? for how long ?*
  - *is it ass. With any notable circumstances e.g illness , holiday to hot climate , difficulty potty training ?*
  - *how Frequenctly he open his bowel ? (<3 complete stool/wk).*
  - *What about Consistency of stool (hard 'Rabbit droppings').*
  - *Is the defecation Painful .?*
  - *Any soiling and how often ?.....over flow incontence .*

- *blood around stool(fissure) ?*
- *toilet training and time spend at toilet?*

- *Nutritional H_X in detail :*
  - *what type of diet ? are you took food rich in fibre ?*
  - *are you drink good amount of fluid?*
  - *Allergy to any type of food or medicine ?*
- *What about appetite ? vomiting ? nausea ?*
- *abdominal pain (anylasis)?*
- *General : ass fever ? any behavioral problem ? sleepness ?*
- *What about growth ?*
- *SYMPTOMS OF HYPOTHYROIDISM :*
- *Any neck swelling ? generalized fatigability ?*
- *does your child tolerate cold weather more than others ?*
- *does your child start to gain weight recently ? dry skin ?*
- *your child school performance deteriorate?*
- *Urinary system (uti)*
- *any concern regard urination? UTI , bed wetting?*
- *Any bladder problem ? …….spina bifida*
- *Any change in color of urine?*
- *CNS : any associated headache ? any lower limb weakness ? any back defect.*
- *CVS : any awareness of heart beat ?*
- *R.S :(to r/o CF) any cough ? sob?*
- *MSS : any ass skin spots ? and joint pain ?*

past H_X :

- *Hx. constipation ?*
- *hx. Of Other illnesses like gland swelling in the neck called (thyroid gland) ?*
- *hx. Of hole on the bottom of the back?*
- *Hx. Of admission ? where and why ?*
- *Hx. Of GP VISITS ? any f/up*
- *Hx. Of previous travelling ?*

drug hx.:

- *is he in any current or chronic medications?*
- *No any drug tried for constipation ?*

Birth HX :

- *Any concern regarding pregnancy ?*
- *Any concern regarding delivery ?*
- *Is he passed stool in 1^{st} 24 hours? If delay consider : meconium ileus , hirsunburg disease .*

Development : is like his peers or lacking behind ? in case of spina bifida

Family hx. :

- *Similar condition ?*
- *Fhx. Of swelling in the neck "thyroid gland" . or cystic fibrosis ?*

Social hx.:

- *Impact of disease on family :*
  - *Overflow soiling (very loose / very smelly stool/ passed without sensation.*
- *Impact of the disease on pt.: over flow soiling*
  - *effect on school attendance and performance ?*
  - *peer relation ?*
  - *psychology depression ? bulling*
- *Personal : job and education of parents? Who take care of pt.? any health professionals involved like school nurse ?*
- *Economic: happy about income ? any financial support ? or social support ?*
- *Environment : smoking , housing , and animals ?*

What is your biggest worry ?

Discussion

Problem list in case of functional constipation :

- *Bulling at school due to soiling.*
- *Poor peer relationship.*

What is constipation ?

- *infrequent bowel evacuation of hard faces , or difficult/ painfull defecation for more than 1month.*
  Or
- *Functional constipation presents as persistently difficult, infrequent, and seemingly incomplete defecation that does not fulfill the IBS criteria*
  Or
- *ROME III Diagnostic criteria for functional constipation : Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis*

  1. *Must include two or more of the following:*
     - *Straining during at least 25% of defecations .*
     - *Lumpy or hard stools in at least 25% of defecations.*
     - *Sensation of incomplete evacuation for at least 25% of defecations .*
     - *Sensation of anorectal obstruction/blockage for at least 25% of defecations*
     - *Manual maneuvers to facilitate at least 25% of defecations (e.g., digital evacuation, support of the pelvic floor)*
     - *Fewer than three defecations per week*
  2. *Loose stools are rarely present without the use of laxatives*
  3. *Insufficient criteria for irritable bowel syndrome*

What is fecal soiling ? overflow as a result of fecal impaction:

- *Passage of loose and offensive stool's in child's underwear over which child has no control.*

What is encoprosis ?

- *inappropriate passage of normal formed faeces in inappropriate places .often ass with behavioural problems.*
- *usually on to the underwear , after age of 4 yrs*
- *Types of encoprosis :*
  - ✓ *Retentive : obsessional toilet – training practices*
  - ✓ *Non retentive : contious , disorganized , chaotic families.*
- *Treatment of encopresis :*
  - ✓ *Exclude other cause*
  - ✓ *Laxative to clear bowel.*
  - ✓ *Education for parent*
  - ✓ *Star chart.*
  - ✓ *Psychotherapy*
  - ✓ *Family therapy*

Investigation:

- *Lower limb neurological examination , lower back ----spina bifida.*
- *perianal inspection. Looking for fissures.*
- *Abdominal examination : for scar of hirsunburg disease .*
-
- *T.F.T.*
- *S.ca , S/E.*
- *Test for celiac disease.*
- *Barium Radiology .*
- *Rectal biopsy in case of hirsunburg disease.*

When consider referral for rectal biobsy ?

- *Hx. Of delay passage of meconium*
- *Constipation since neonatal period.*
- *Hx of abdominal distension and vomiting.*
- *FTT.*
- *Fhx of hirschprung's .*

<u>Management of functional consttipation: MDT</u>

Team Involving : pediatrician , school nurse , dietein , behavioural therapist.

- *<u>Non drug treatment :</u>*
  - *Change Life Style(Type of food /increase fluid intake / Exercise)*
  - *Education of parents.*
  - *Behavior management – star charts , regular toileting. May need psychology referral .*
  - *Community management – school nurse , community children's nurse.*
  - *Referral to constipation clinics/nurse specialist.*
- *<u>Drug treatment :</u>*
  - *a. <u>Disimpaction : in presence of impacted stools :</u>*
    - *1. Oral ttt :*
      - *Amacrogol laxative Polyethylene glycol "movicol " for 7days. (work as softener + stimulant).*
      - *Stimulant laxative e.g: Senna or sodium picosulphate , if no result with macrogol laxative.*

- *Osmotic laxative "Stool softener "e.g : Lactulose in combination with stimulants laxative if macrogol laxative not tolerated.*

2. *Rectal medications (sodium citrate enemas) if oral medications failed*
3. *Manual evacuation under anaesthesia in failure of 1 and 2.*

b. *Maintaince therapy : for 4-6 month*

- *Laxatives : 1/2 dose of disimpaction dose.*
  - *Macrogol*
  - *Stimulant laxative +/- stool softener.*